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# BULBS FOR POTS

AND SPRING PLANTING IN THE GARDEN



A CATALOG OF THE BULBS OF THE AMARYLLIS, IRIS, ORCHID AND OTHER PLANT FAMILIES

**SPECIAL ARTICLES:** How To Grow Amaryllis;—Gladiolus;—Gloxiniyas;  
Tuberous Begonias;—Billbergias, etc. Full culture information for all plants  
listed. Many new listings.

A Personal Letter, to you, "Fun In '51."

## SPRING 1951



**CECIL HOUDYSHEL**

1412 Third St.

La Verne, California

U. S. Department of Agriculture

AN 31 1951



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## FUN IN '51

### A PERSONAL LETTER, — TO YOU

Dear Floral Friends,

As our old customers know, it is my custom to preface our catalogs with a personal message to every one of you. Few persons in business, I believe, have had the privilege of receiving so many fine letters from their customers as I have. There are letters relating to garden experiences, successes and sometimes even failures; plant material for identification; sick people, yearning for flowers to help them get well; graduate and undergraduate students from colleges who need information or material for research; just friendly letters of appreciation and good will.

I try to reply to all that need a reply but there are too many for a personal reply when not needed. For those, this catalog letter is my reply and it is likewise addressed to every one who receives this catalog. It is intended to carry from me to you a message of faith and hope; of good cheer and confidence; of strength to meet every condition of life; of right living and straight thinking; of correct evaluation and appreciation for all good things.

One year ago I suggested "Fun in '50" as a good slogan for the year. Last week our printer set up our front page and modified the slogan to "Fun in '51." It seemed like a good idea to me and I had already considered using that slogan anyway. The printer made up my mind for me.

These are a few of the synonyms for the word "fun" as listed by Roget's Thesaurus: amusement, entertainment, diversion, distraction, relaxation, solace, pastime, sport, recreation, merriment, avocation, pleasure, frolic, laughter, etc. I am sure these synonyms define something we all need.

In times like the present, when many are worried by the international situation, we do need to be distracted from that worry. If we have fear, or expectations of defeat or frustration for our national ideals, we should take something for it. Let me be your doctor. I will prescribe "garden fun." Preliminary to that suppose you take a large dose of faith in eternal justice; faith in our American democratic ideals; faith in our strength and our resources and those of our allies, the democratic world, which exceed those of the entire communistic world except possibly in man power. But our superior weapons could overcome that advantage.

What we all want is peace, not war. George Washington advised us that the best way to preserve peace is to be prepared for war.

In the year '51 we must work hard. Production of materials for the defense of the free world will be at a high peak. There will be little unemployment and there need be none for those willing and able to work. Wages are already high. We shall need to make sacrifices. But we shall not have to sacrifice our essential needs, nor even our comforts. Our real pleasures will be available. We can be happy and we can have fun.

I said a year ago, "Fun is fun - damental." It is a real necessity because it rests our minds and bodies and it makes us strong. We recover from today's efforts and become fit for tomorrow's.

It is our business to provide the most fun - damental of all pleasures, flowering bulbs and plants. Gardening fun is something you can have. It is not expensive and it yields the greatest dividends of profitable relaxation and recovery from weariness of mind and body. Flowers sooth and comfort us. They prepare us for another day.

I do not need to convince those who are our old customers or those who have recently asked for our catalog. You already know that you want and need flowers. There is no reason why you should not have even more and better ones in '51.

This catalog was prepared with the greatest care. From page 2 to page 32, it has been fully revised to give you the best culture information and to refer you to the best sources of information. We prefer to tell you about the culture required and equipment needed before you buy the plants instead

of sending directions with the plants which may be impossible for you to follow.

In this catalog we are listing many new varieties. In Gladiolus we are again able to list Elizabeth The Queen. Many consider this the most beautiful gladiolus. Birch Red and Spic and Span are the coming red and pink varieties. They have been so expensive that we did not purchase stock until this season. Last year Birch Red sold for \$1.00 and Spic and Span for 80c ea. Please note our prices on these and also other winners, Gold Dust, Huntress, Leading Lady, Ogarita, and Oregon Gold.

Last year we could list only 25 var. of Caladiums. This year we can offer 34 var. There are new species and varieties of Oxalis; Spathiphyllum, a close relative of Anthurium; more and better sorts of Gloxinias, Achimines and African Violets. In this family of Gesneriaceae we also offer for the first time two additional species, Smithiantha (or Naegelia), and Dolichoderia tubiflora, usually called an Achimines.

Note our African Violet introductions, Ethel, Spoongirl and Sherry Girl. I have always liked the Girls. Their crenate foliage adds to the beauty of the plants and Sherry Girl, named for our great-granddaughter, is the prettiest girl of all.

If you could spend only \$1.00 for bulbs this spring, I would probably advise you to spend it for just one bulb of the new named varieties of Tub. Begonias, Red Triumph, Rose Dawn, Autumn Glow or Sunset.

Do you subscribe for a garden magazine? If you do not you should subscribe for one at once. If you do, get another for more information on the same or additional subjects. I do not believe I have ever before seen any enterprise grow up and attain full stature in less than one year's time. But Popular Gardening has done exactly that. Perhaps it is because Paul Frese, well known authority on flowers, writer and editor, now edits it; Chas. M. Winchester, the publisher, has had long experience; Dorothy Biddle, Garden Club Editor, is a writer and lecturer of note. Our friend, Sam Caldwell, The Old Dirt Dobber, of Nashville, sometimes contributes an article. There are many other noted contributors. It is a bargain at \$2.50 per year (12 copies) or 2 years for \$4.00. Send your subscription to Popular Gardening, Dept. H., 90 State St., Albany, N. Y.

We are much interested in the welfare and happiness of people and that is why we grow and promote flowers. We think it is an important enterprise. But it must pay its way because every asset that we have is invested in this enterprise. It must support itself, us and our employees. If you who receive our catalog buy from us, the business will do this and also enable us to expand. If you approve of us and of what we are trying to do and are satisfied customers (we do not pretend perfection), then send your friends to us. Tell them to ask for our useful catalog.

We hope that all of you may have a fine garden this year, outdoors, in your house and greenhouse and that you may be happy and full of hope for the future. If plain living and a little harder work for those who can, becomes necessary let us be thankful that we can contribute these things to our America and to our democratic ideals.

If you are interested in colored slides of our bulbs and plants, with a lecture for your club, inquire from Mrs. Houdyshel.

Sincerely,  
Cecil Houdyshel

**Winter Shipment of Saintpaulias** is impossible by parcel post. It may be possible by express to milder northern states if customer, dealer and carrier cooperate in the following plan:

If shipped during cold weather we will wrap plants with extra heavy cotton around them and place them in the center of a large carton with at least 3 to 5 inches of still more insulation of shredded paper. Their perishable nature will be noted on carton. They will be shipped so that they do not arrive on a week-end and we will notify you when shipped. We will then instruct you as to the further procedure. Our advice is that you wait for at least moderate spring weather.

## TERMS AND INSTRUCTIONS FOR ORDERING

The prices in this catalog cancel all former quotations.

**California Customers must add 3% Sales Tax.**

Remit by check or M. O. If stamps are sent, send \$1.05 for \$1.00. We do not carry accounts. Remit the full amount of your order in advance.

**C. O. D.** We do not ship bulbs C. O. D.

**Postage prepaid** on orders over \$1.00. Under that, add 15c extra. Many ignore this. No small orders will be filled unless you comply.

**Insurance and Special Handling.** Insurance up to \$5.00 value costs 5c. \$5.00 to \$10.00 costs 10c. \$10.00 to \$25.00 costs 15c. Over \$25.00 costs in proportion to \$25.00 rate. **Special Handling** gives your package the same handling as First Class mail and hastens delivery. Up to 2 lbs. costs 15c. 2 to 20 lbs., 20c. Heavier in proportion.

**Special Delivery** of packages costs you 25c for 2 lbs. or less. 2 to 10 lbs., 35c. Over 10 lbs., 45c. This hastens transportation and delivery as it will also be given the same service as Special Handling without an extra fee.

Insurance, Special Handling and Special Delivery are for your protection. Please remit the amount required if you want this protection.

**Express** is much the safest transportation. Express cars are heated in winter but mail cars are not. Express also handles more carefully and assumes more responsibility for delivery in good order. But it costs more and we ship that way only collect. We add extra bulbs to approximate cost of postage.

**Prices** given are usually for one bulb. A dozen costs 10 times the price of one; 6 are sold at dozen rate; 100 cost 70 times the cost of one or 7 times the cost of one doz.; 50 are sold for the price of 4 doz., not at 100 rate, unless otherwise specified.

**Wholesale.** We do not give discounts to dealers on small quantities of items from this catalog. Only a very few items herein can be quoted below the quantity rates. But in most cases those rates are about equal to usual wholesale prices. Upon inquiry we will quote prices on desired items if able.

**Foreign orders.** Our prices include prepaid delivery as far as our 8th postal zone. We can usually prepay to Mexico or Canada. It is best to include some extra for export orders. If too much, we add extra bulbs. The 100 rate prices do not apply on export orders unless customer pays transportation. Air mail is often advisable for export orders but expensive.

**Canadian Customers.** Apply to Sec. of Destructive Insect and Pest Act, Advisory Board, Ottawa, Ont. (or ask your P.M.) for Permit and mailing label and send these with your order.

Many **Latin American Countries** now have certain restrictions on importations. Usually it is only necessary to send us an official permit. Your post master can supply all information or tell you where to get it.

**Errors.** We make them but correct them, if notified at once.

**Partial Shipments.** If everything is not included in first shipment a slip so stating is enclosed. When final shipment is made, another slip so states. Check them with order and if short, notify us at once.

**Guarantee.** Our bulbs are true to name and healthy, but we do not guarantee results since we do not control the conditions under which they are grown. If, in your opinion, our bulbs are not up to our specifications, notify us at once. If you are not then satisfied with our explanation, they may be returned. No refund will be made if planted unless circumstances indicate bulbs were at fault.

**Culture directions** are in this catalog, hence none are sent with bulbs.

**Catalogs.** Spring Catalog, Jan. 15. Fall Catalog, Aug. 15. Names are dropped from our mailing list if you do not buy for two years. If not interested, please ask P.M. to return this catalog at our expense, thus saving paper, labor and postage. We will appreciate it.

**Time of Delivery.** All bulbs are delivered within the range of correct planting dates. When very cold in the north, we aim to time the shipment of tender plants and bulbs so that they may not be frozen in transit.

**Important Announcement.** Many persons apply for our catalog only to get the information but buy no bulbs, or very few. Such names are soon dropped from our files. Recently we discarded 15,000 names that had received our catalog two years or longer but sent no orders. These people had received 4 catalogs each, or a total of 60,000 catalogs. Can you realize that this cost us at least \$4,000.00. The postage alone cost \$600.00.

We must avoid this loss. We are therefore revising the terms upon which we will keep your name on our files to receive catalogs twice annually. Send us an annual order amounting to \$2.50 or more.

Or you can merely be a "subscriber" for the catalog for 25c per year. But you must remember to send, as we will not ask for it.

**California Bulbs** are as good as any grown. We are often asked if they are good for growing in east. They must be because several important firms buy from us. We do not solicit or advertise for wholesale orders but annually sell 50,000 or more to eastern dealers. Other growers sell millions. They must be good and our customers say they are.

Again we are asked by a would-be Indiana customer if we can ship that far away. Good Land O'Goshen! We have shipped thousands of dollars worth of bulbs and orchids safely to the Philippines. Recently we sent African Violets to Costa Rica and they arrived in excellent condition. We ship to Palestine, Egypt, Russia, many far away places.

## GENERAL CULTURAL DIRECTIONS

Rich, sandy loam is the best soil. Only a few, like Bearded Iris, prefer heavy soil. A very few, like Gloriosas, must have sandy soil.

All soils require the addition of much humus. Compost all garbage, weeds, leaves, cut branches and manures. When rotted, add to soil and thoroly mix.

**Fertilizers.** We recommend only animal manures, compost and commercial fertilizers that are of organic origin such as Spoonit and others listed in this catalog for use on potted bulbs. In the outside garden fresh manure can be used on most plants, that are growing vigorously, as a very light mulch, but after flowering. Too much fertilizer before flowering time may almost or wholly stop the flowers. When the growth of a plant becomes abnormally rapid it is unlikely to flower or produce fruit. Your over-fertilized peach tree is likely to produce no fruit.

Do not fertilize a plant in dry soil, or use any fertilizer (unless thoroly rotted in a compost heap) in the soil before planting bulbs, seeds or plants. Water lawns, trees, and plants well the day before applying fertilizer and again a few days after application. Do not fertilize a sick plant in order to make it well. You are more likely to make it worse or even kill it. Small plants and seedlings should not have too much either. Lush, rapid growth may be weak and "flabby." Sturdy growth with firm structure is better. Chemical fertilizers are like "patent" medicines. They are stimulating but often the final result is bad. The physical structure of soils is the most important thing. A well drained, friable soil is the best. Sand and humus can be added in sufficient quantities at least in flower beds and the humus can be added in fields by growing cover crops. For humus, add rotted manure, composted weeds, grasses and leaves, leaf mould or peat. It is seldom necessary to add any but organic materials to soils.

Compare plants with people. Both are living, organic beings. Air, water and food are necessary to their growth and health. But one does not give babies beefsteak, fried potatoes, apple pie and a cup of coffee. Nor is this a good diet for an invalid or an ill person, however good it may be for one in vigorous health who performs hard physical labor. Nor should plants be over fed or fed at all if sick or thirsty. But since one cannot add much rich food when potting a bulb, very good results may be obtained by a monthly feeding of very weak liquid manure, color of very weak tea. A more convenient way is to use Spoonit, Plantabs or Vigoro tabs which we list under Garden Supplies. They are less messy.

After blooming, many neglect their bulbs. As a result the bulbs do not

flower the following year. For success one must continue to give good culture. This is the time to fertilize, irrigate and cultivate frequently, until yellowing foliage indicates the bulb is becoming dormant. During the growth period next year's flower buds are formed.

**Depth of planting and distance apart** often cause too much concern. Bulbs usually have sufficient adaptability to do well under widely varying conditions. If left in one place a few years, most bulbs adjust themselves to their preferred depth. Approximately, bulbs should be about 2 or 3 times their diameter apart unless their habit of growth is spreading—like Ranunculus. In such cases plant farther apart. Bulbs as large as Daffodils may be 4" to 6" deep. Bulbs with a heavy erect stem need deep planting in order to remain erect. Plant deeper in light sandy soils than in heavy soils and in cold climates to protect them from frost.

**Pests.** Snails and slugs are serious pests and must be controlled in flower and vegetable garden. The best control is Bug-Geta Pellets. These may be broadcast while one must stoop to place a powder. They also help to control cut worms and grasshoppers. The 25 lb. bags are the most economical way to buy for a bad infestation. **Ants** are pests everywhere. They distribute aphid and mealy bug and tend them like domestic animals. Ant-B-Gon will kill entire colony. Quick temporary relief may be had in greenhouse and garden by use of a Chlordane dust, very poisonous. Keep it off of food plants and away from children and pets. Do not breathe the dust and clean up thoroly after applying it. It is also an excellent dusting powder on Gladiolus as a remedy for thrips. It also gets cut worms. **Mealy bugs** are universal pests and very destructive to plants. First, destroy all the ants and wash or clean them off of house or greenhouse plants. A bit of cotton twisted around end of a toothpick and then dipped in alcohol is a useful tool. In the garden, a spray of water from the hose will dislodge mealy bugs, aphid, etc. Mealy bugs and mites and sometimes Red Spider are serious pests on house or greenhouse plants. Any spray containing parathion or lindane will control these but they are so extremely poisonous that we do not list them or take the responsibility of giving directions for their use. They are unsafe for use in a living room. For plants in the house try N. N. O. R. It is safe, but less effective. For Scale use an oil base spray, preferably containing D. D. T. which you can add. Do not use oil sprays on orchids. Use only wettable or liquid D. D. T. sprays.

See our listing of **Insecticides** under **Garden Supplies**.

If you do much garden work and end the day too tired, you owe it to yourself to use our light weight plastic and indestructible Resinite garden hose. See the listing. It is the most economical of all.

**Acid and Alkaline Soils.** Most plants thrive in mildly acid, neutral or mildly alkaline soils. But others do not have so wide a range of tolerance. Rhododendrons, Azaleas, Camellias, Gardenias, Zantedeschias, Caladiums (and other members of Arum family), Nerines, Haemanthus, Gloxinias, Begonias, Orchids and most shade loving plants require an acid soil. Some like Gladiolus prefer mildly acid to neutral soils; Bearded Iris do best in neutral to alkaline soils. The acid-alkali balance depends upon the concentration of hydrogen ions in a saturated solution. This is expressed in pH units. pH 7 is neutral. Below that the acidity increases; above it the alkalinity increases. For the mathematical, I will explain that the numeral is the negative logarithm denoting the concentration of hydrogen ions in gram atoms per liter.

In regions having heavy rainfall, excess alkali is usually dissolved and carried away by the runoff. Semi-arid regions usually have alkaline soils. Calif. soils usually have too much unless cover crops or applications of humus, which are acid, have lowered the pH. I am told that Texas soils are sometimes too alkaline. The remedy is obvious. Apply humus, ground phosphate rock, or small, even applications of sulphur. Improve the drainage.

**Potting Directions.** Use clean pots of the right size, neither too large or too small. A 2½" Amaryllis, for example, needs a 6" pot. A 1½" Eucharis needs 5" pot. Small bulbs like Ranunculus or Achimenes may have 3 to 5 in a 5" or 6" pot. Cover the hole at bottom with a piece of broken pot, concave

side down. Above this place small pieces of broken pot and gravel. This helps to drain away excess water. Over this drainage material we usually place a handful of sphagnum moss to prevent the soil from sifting into and clogging the drainage material.

The drainage must be perfect and it is essential that the soil above this drainage be of a friable texture that permits water to pass thru freely.

The best soil is a rich sandy loam with the addition of plenty of humus. For humus one can combine rotted leaf mould and old rotted dairy manure well broken up and rubbed thru a screen of smallest gauge. For most plants the proportion can be  $\frac{2}{3}$  sandy loam,  $\frac{1}{3}$  humus.

**Fertilizers.** Many advise the addition of fertilizer to potting soils. We never use any except the rotted dairy manure and leaf mould and sometimes a tablespoon of bone meal. If new roots come into contact with much fertilizer they are burned. Commercial fertilizer is especially a hazard. A potted dormant bulb, seed or plant must be babied to the extent of giving only a light diet. A rich, full meal will often cause failure. We prefer to get them well started and growing and of some size before adding more fertilizer, if any. The chief food of plants is carbon dioxide taken from the air thru the foliage. Water, nitrogen and minerals come from the soil.

When bulbs are well rooted, liquid fertilizer can be used once a month. Weak liquid manure is excellent but not quite as well balanced as Spoonit.

For the starting temperatures and further culture of the plants please read the culture advice given with the listings.

**Sources of Further Information.** Please note our **Garden Reference Books**. Join local garden clubs. Subscribe for **Popular Gardening**, new gardening magazine edited by noted garden authority, Paul Frese, formerly of Flower Grower. Published monthly for \$2.50 per year. Send subscription to Popular Gardening, Dept. H., 90 State St., Albany, N. Y.

**Flower Grower**, the old popular garden magazine, should also come to you every month. \$3.00 per year. Send to 99 N. Broadway, Albany, N. Y. These two magazines are devoted only to flower gardening,—not to furniture, food, easy or luxurious living. Gardening lengthens life. Luxurious living shortens it. Take your choice.

## GARDEN REFERENCE BOOKS

**Bailey's Cyclopedia of Horticulture.** This 3-vol. set of over 3,600 pages describes almost every cultivated plant and has a wealth of culture information. On Orchids alone, this work is most valuable for its descriptions and culture instructions for almost every orchid in cultivation. The same is true for all types of bulbs, plants, shrubs or trees. Price \$37.50. This is the most monumental work in any language on the entire field of Horticulture. It is an ideal gift for a plant lover.

**Hortus Second** (Bailey). A Concise Dictionary of Gardening. This 778-page volume lists and describes nearly every plant offered in catalogs, and some that are not in the Cyclopedia of Hort. It contains only a few culture hints. Both works should be in every garden library. Price, \$7.50.

The above publications are subject to price changes, without notice, by the publishers. In the case that prices again rise on these or any books listed here we will notify the customer. The customer may then accept or cancel order.

**A Southern Garden**, by Elizabeth Lawrence, a handbook for the Middle South. A most useful handbook for all gardeners, north or south. Bulbs and all garden plants. 251 pages. Price, \$3.00.

**Enjoy Your House Plants.** Excellent handbook of window gardening by Dorothy Jenkins and Helen Van Pelt Wilson, 238 pages. Price, \$2.50.

**Begonias And How To Grow Them.** Bessie Raymond Buxton. Invaluable in growing all Begonias, including the Tuberous. 161 pp., \$3.00.

**American Orchid Culture.** Edward A. White. This is a complete handbook of American Orchid Culture for both commercial and amateur growers. Most

interesting accounts of Orchid hunting trips, in many lands, are related. 14 beautiful color plates and many other illustrations. A beautiful, interesting, useful book. 276 pp., \$6.00.

**Greenhouse Gardening For Everyone.** Ernest Chabot. Important factors are noted including correct temperatures for forcing plants, bulbs and orchids. 266 pp., \$4.00.

**Tuberous-Rooted Begonias and Their Culture.** George Otten, veteran grower of Tuberous Begonias, with 60 years experience. An 88-page book, with 35 excellent illustrations. Price, \$2.00.

**Tuberous Begonias,** by Worth Brown. Mr. Brown is one of our most important hybridizers and wholesale growers. His book is a complete guide for the successful growing and propagation, outdoors or as house plants. Illustrated. \$2.75.

**Bulbs For Beauty.** Charles H. Mueller. 296 pages, illustrated. Experienced gardeners will gain new information about bulb culture from this book. Price \$3.50.

**How to Grow Orchids.** By Cecil Houdyshel. A 12-page pamphlet, no illustrations, carefully explains requirements of easily grown orchids. Price 25c.

**The African Violet, Saintpaulia.** Helen Van Pelt Wilson. The first and still the best book on Saintpaulias. Revised and enlarged, by Helen Van Pelt Wilson. The revision includes all the better new varieties. Discusses all phases of culture and classification of types and varieties. Price, \$2.75.

**The New Garden Encyclopedia.** By a group of Horticultural Experts, edited by E. L. D. Seymour, a well known garden magazine editor and authority on gardening. This is a complete, practical guide for every detail of gardening. It gives pronunciations of plant names. 1380 pages, 10,000 articles, fully illustrated. Price, \$3.95.

**Favorite Flowers in Color.** Edited by Seymour. 634 pages of descriptions and 800 flowers are shown in full natural colors. Everything that flowers from trees, shrubs, to bulbs. One of the most beautifully illustrated flower books published. Price, \$5.95.

The books are cloth bound and printed on book paper. Postage prepaid. Add 5c for insurance to \$5.00. Sales tax 3% for California customers.

## GARDEN SUPPLIES

Most of the following are mentioned in our **General Culture Directions** and are of use in the outdoor garden, window garden or greenhouse.

**Bug-geta Pellets,** 25 lb. bag, express f.o.b. La Verne, \$6.25.

**Ant-B-Gon.** Set 4 dispensers, filled, 75c f.o.b. Cheaper by mail. Ask your P.M. the cost of 2 lbs. from La Verne and send this amount extra. Liquid for refilling, 4 oz. 30c postpaid.

**Garden Volc** is a pure petroleum spray, effective for mites, mealy bugs, scale, red spider, white fly larvae, etc. Dilute with water to make 200 times its volume. It is also a good carrier for other insecticides like Black Leaf 40 used according to their own directions. Use small fly sprayer for house plants. Price, 4 oz. for 40c postpaid. For extensive use buy one gallon cans for \$2.85 f.o.b. La Verne. We will ship by express, or send postage for 10 lbs. if preferred by mail. Before using any spray it is best to learn first whether the plants are tolerant to that spray. If you do not find or know the information, try one plant, or even one side of a plant first.

**Fertilizers.** Use tablet form that can be pushed down on side of pots to gradually melt down. Can also be used on outside garden plants. **Plantabs**, small package 13c prepaid. Large package, 65c prepaid. **Vigoro Plant Tablets.** Vigoro is a well known and approved fertilizer. Try this convenient form for your house plants. They are just as good too in the garden. Per package, 13c postpaid.

**Spoonit** is probably the best all around fertilizer for house plants. Equally good, of course, for garden plants. It is our own preference and the one we use on all potted plants in our greenhouses. It is also the most convenient and economical to use. The analysis shows 18% nitrogen, 18%

phosphoric acid and 14% potash. To use, one dissolves a rounded tablespoonful in a gallon of water. Soak the soil with this once a month. A pinch of Spoonit in a pint size vase of water preserves and keeps cut flowers fresh for a longer time. Feed seedlings after transplanting with half strength solution the first time. In two weeks begin monthly feeding with full strength solution. **Prices:** 7 oz. can, 50c, (weight packed, 1 lb.); 1½ lb. can, \$1.00, (weight packed 2 lbs.); 4 lb. can, \$2.00, (weight packed 5 lbs.). These are f.o.b. prices and apply to express shipments only. If wanted by mail send postage extra. Ask your post master what zone Los Angeles is in and the postage on the weight when packed, of size wanted. Be sure to include this amount extra. If you do not we have to write and remind you before shipping.

**Horticultural Peat.** We offer a good grade of fine peat, 12 lbs., express collect, for \$1.00. By mail for postage on 12 lbs.

**Danish Peat** is more acid than our domestic peat. Price, 6 lbs. for \$1.00. Postage extra. Ask your P.M. what zone Los Angeles (a suburb of La Verne) is in and send parcel post postage for 6 lbs. Per 100 lb. bale, \$8.50 f.o.b.

**Sphagnum moss** is very useful for lining wire baskets for hanging plants and has many other uses. It has an acid reaction and retains moisture, hence is valuable in the soil for acid loving plants. We handle the very best from Michigan. Price \$3.85 at our ranch. Please add 25c for packing charge on mail orders as we must repair bags when shipped. Weight 12 to 14 lbs. We ship by express, charges collect. Price 50c/lb. postpaid.

**Rootone.** One-half ounce for 50c, postpaid. 1-lb. can, \$5.00 plus postage if by mail. Dust seed, end of cuttings or base of bulbs for quicker rooting and more rapid growth.

**Vitamin B-1,** 100 tablets, 75c.

**Directions for use,** applying only to our own tablets. In transplanting bulbs or any plants, loose roots, dissolve 5 tablets in 1 gal. of water. Soak roots in this 15 to 30 min. Pour solution around plant when set. To stimulate growing plants, for the first application, dissolve one tab. in 2 gal. water. For succeeding waterings, use 1 tab. to 4 gal. water once a week. **Warning.** Do not soak dormant bulbs in Vit. B-1. It rots them.

**Garden Hose** are a prime necessity for gardens everywhere and for greenhouses. The most economical and the lightest weight hose is the **Airlite** brand of **Resinite Plastic hose.** The inside diameter of this hose is only ½" yet because the surface is mirror smooth and frictionless it delivers as much water as rubber hose of a larger diameter. Nothing can injure this hose except fire and very hot water and it is claimed to last forever. However, no one has yet lived long enough to prove this claim. It is not damaged by sun, weather, being run over by auto or truck. No chemicals affect it. It has no cotton to rot nor rubber to disintegrate with age. It is like Cleopatra, "Age cannot wither her." Price, 25 ft. length, which weighs less than 4 lbs., \$5.10 f.o.b. La Verne. Or by mail, postpaid zones 1 and 2, 35c extra. Zones 3 and 4, 45c extra. Zones 5 and 6, 55c extra. Zones 7 and 8, 75c extra.

Don't forget 3% sales tax due from California customers.

**Wire Baskets.** Our wire baskets are useful for growing many types of orchids and for all hanging basket plants. They are electrically welded, galvanized steel. The best obtainable. Price 8" 90c ea. or \$10.50 per doz. 10" for \$1.10 ea. or \$12.75 per doz. All are prepaid prices.

**Snap On Pot Hangers,** for hanging any size pot under trees, in lath house or greenhouse. Galvanized wire, non-rusting. 40c, \$4.50 per doz., postpaid.

**Baffle Spray Fogger,** No. 215A. For greenhouse, lath house or outside. Throws a fog spray 6 ft., increasing humidity and lowering temperature. Adjustable. Fits a ½" pipe. Price, \$1.36 (plus 4c tax in California). Send 30c extra if wanted by mail.

**Hose End Fogger,** No. 217AB. Useful for spraying Orchids, Tub. Begonias, etc., and for damping the greenhouse to increase humidity. Price \$1.50 and 35c extra by mail.

**Supplies** do not take quantity rates as applied to bulbs. Thus a dozen of an item costs 12 times as much as one unless a dozen rate is quoted. If quoted at a dozen rate, one-half dozen would take the single rate.

# BULBS AND ORCHIDS AS POT PLANTS

Bulbs and orchids are most desirable as pot plants. They may be grown in the living room, kitchen, a light basement or in a small greenhouse quite as well as in a large commercial greenhouse.

The following bulbs and plants are recommended for growing or forcing in pots.

**Amaryllis Family:** Agapanthus, Amarcrinum, Amaryllis, Clivias, Habranthus, Haemanthus (or Blood Lilies which include Katherinae, Coccineus, Albiflos, Carneus, etc.), Ismene, Tulbaghia, Zephyranthes, etc. Include Crinums if you have large space; **Iris Family:** Marica; **Oxalis Family:** both winter and summer growing species; **Arum or Calla Lily Family** includes Yellow and Pink Callas or Zantedeschias, Fancy Leaf Caladiums (the most gorgeous pot plant in existence because every leaf is like a brilliant flower), Sauromatum venosum, Amorphophallus revieri; **the Gesnaria Family** including Gloxinia, Achimines, Saintpaulia and Naegelia; Orchids; Ranunculus and Anemones; Bromeliads or Pineapple Family including Billbergias.

Nearly all our bulbs and plants may be grown in pots but there are exceptions as indicated.

## CATALOG ARRANGEMENT

is by Plant Families, according to their relationships.

In the following lists the **genus** (plu. genera) is mentioned first. After it, the **species** (plu. also species) or horticultural variety is named. The initial of the genus is used for the second and succeeding species. Thus A. will stand for Amaryllis or Agapanthus depending on the genus last named in full. When a person's name follows a plant's name, that person is the botanical authority for the name.

## THE AMARYLLIS FAMILY — Amaryllidaceae

This Family includes the following bulbs, Agapanthus thru The Alliae.

**The American Plant Life Society** was founded in 1934 as The American Amaryllis Society. The interests of the Society have recently been enlarged to include other bulbs and plants and the name changed but with no lessening in interest in Amaryllids.

The annual book, "**Herbertia**," is devoted to Amaryllids. It consists of about 250 pages, beautifully illustrated, on fine book paper, and is edited by Dr. Hamilton B. Traub of the U. S. Dept. of Agriculture, the greatest living authority on the Amaryllidaceae. Each member receives a copy.

The members also receive the occasional publication, "Plant Life," on other bulbs and plants.

Those who grow Amaryllis as an interesting and intellectual hobby and who love their vivid beauty, are invited to become members of the society. The annual dues are \$3.00 per year, which you may send to Mr. E. Frederick Smith, Sec., Box 2398, Stanford, Calif., or you may include this membership fee with your bulb order to me.

**Amaryllid nomenclature.** Carl Linnaeus, father of modern botany, made the first, rather complete scientific arrangement of plants according to relationships in the 18th century. His information about many plants was wholly inadequate to achieve perfection. Even in my later first French edition, 1798, nearly all American epiphytic orchids were placed in one genus, Epidendrums, and under the genus Amaryllis he included certain Crinums, Zephyranthes, Sprekelias, Brunsvigias, Nerines, etc. Botany is a progressive science and later explorations and discoveries have made possible many improvements in plant classifications and have required changes in nomenclature. Horticulturists are often loath to accept the new classifications and names. But we must do so even if inconvenient at first. It is not logical to continue an error.

In our catalogs, we accept changes in classification and names as made by recent writers in *Herbertia*. These have been approved by "Gentes

Herbarum," the publication of the Bailey Hortorium of Cornell University. To help you avoid ordering a bulb you already have we give both old and new names, thus: *Brunsvigia rosea* (*Amaryllis belladonna*); *Amaryllis advena* (*Hippeastrum advenum*).

**Agapanthus** means Love Flower. Blooms in spring and summer. Large attractive umbels, blue or white on tall erect stiff stems. Easy to grow in south in full sun or slight shade, any good soil, and in the north in tubs or buckets, wintered in basement. Delivery any time.

**A. longispathus.** New species. Flowers resemble *Orientalis* but blooms more profusely and is more graceful. 50c.

**A. orientalis (umbellatus).** Blue Lily of the Nile. Our variety is an especially fine one with deep blue flowers on a tall stem. Many flowers are produced in spring and thru summer. 50c ea. Extra large roots, 75c.

**A. orientalis,** "Sky Blue." Lovely light blue. 75c ea.

**Amaryllis Linn.** This genus as constructed by Linneaus was untenable because he included plants now known to belong to other genera. The invalid name *Hippeastrum* was used by both Herbert and Baker, but now we are scientifically correct when we use the name that has always been most popular. To the word "Hippeastrum," literally translated "horse star," we can now say "horse feathers," and forget the word.

Amaryllis are the easiest, the most showy and popular of all bulbs for growing in pots. Equally desirable for southern gardens where they are hardy along the east coast to N. Car. and on the west to Vancouver. In the middle section they may be grown as far north as Ark. and Okla., but note special directions for colder sections.

**How to Grow Amaryllis.** In the garden, in the deep south where temperatures go only a few degrees under freezing, Amaryllis bulbs need to be covered only about an inch or two. Farther north they should be planted about an inch below frost penetration, in protected places and mulched with straw, leaves and/or brush. In Okla., a customer reports a depth of 4" with mulch is safe. Try our "Hardy Hybrids" and don't plant over about 6" deep to top of bulb. 4" is better.

Imported, greenhouse grown Amaryllis usually do not do very well in outside garden. We advise pot growing and if shifted to outside in summer, do not let them become dry or otherwise neglect them. In order to achieve high quality of flowers, foreign breeders neglect sturdiness and hardiness.

**In Pots.** A bulb 3" or less in diam. needs a 7" pot, and larger bulbs need larger pots. It is better to pot in Nov. or Dec. Better blooms result. But one can pot them as late as March and it is better late than never. The early potted bulbs will start more easily and give better flowers, but in either case the flowers will be better and will show more fully their full quality the second year.

The best potting soil is a rich sandy loam. If not sandy use a friable loam and add sand. To this add an equal quantity of well screened and well rotted dairy manure and leaf mould. Use no fresh or partially decayed manure and no peat or sphagnum. One tablespoonful of bone meal to each pot is recommended. Mix all ingredients thoroly.

In potting the bulbs, carefully preserve any living roots, even remnants. Clean the base of the bulb and dust the moistened surface of base and the roots with Rootone.

Pot the bulb two-thirds above surface and water enough to settle soil. After this keep the soil only slightly moist until growth starts, then gradually increase. When first potted set them in a cool, light room but not in full sun.

Do not plant Amaryllis too close to trees or shrubs. They do not compete well with roots of such robust plants.

**How to judge the quality of the flowers of Amaryllis hybrids.** The perfect flower of the Leopoldi type should be 5" to 8" across. The petals should be well rounded and broad, overlapping each other, no twisting of petals, and they should form a wide open, flat flower. The texture should be smooth and firm, of good substance. The tube should be short. There should be little or no green in throat but the species Leopoldi contains considerable green. There

are few hybrids that do not contain some green. Very few are perfect in every respect.

There should be no dull colors, like brick red. But colors should be bright and of every imaginable tone within the range of this genus.

Self colors are desirable to go along with stripes and other variations. But it is difficult to get other than red selfs and these are unusual. A few of our Select Strains, American Hybrids are pure red, scarlet, rose or pink selfs. But they are few and not separately labeled. Don't order self colors or any colors except as listed.

**Please note.** There is no quantity discount on Amaryllis except as noted with listing. Do not order any Amaryllis not here listed.

**Amaryllis ambigua.** The flowers have a long tube, like a lily. There are 5 or more on a very tall scape. The exquisite, spicy fragrance perfumes the entire garden. Customers report success with pot culture. Hardy in south. The bulb may be covered by 4" of soil. \$2.50.

**A. immaculata** (*A. candida*) The long, tubular, lily-shaped flowers are pure white except that the tube may have a greenish tint. This might be valuable in breeding for pure whites. Another species in the same subgenus, *Macropodastrum*, *A. ambigua* is believed to be a natural hybrid between *A. elegans* (*solandriiflora*) and *A. vittata*, subgenus *Lais*. The hybrid should be the seed parent for a shorter tube. \$4.00. Very large, \$5.00.

**Amaryllis Hybrids. Select Strains.** These are mostly Howard and Smith, the best American, field grown Amaryllis. A few are our own and other selected hybrids of equal quality. They are much easier to grow, less likely to fall victim to rot or disease than imported, greenhouse grown bulbs.

**Color Classes.** These strains are produced from bulbs selected for finest flowers, grown in a greenhouse for one blooming season only. There they are cross pollinated and the seed ripened. The seed are planted in the field and grown there to flowering size. Weaklings do not receive greenhouse coddling and do not survive. The seedlings are segregated into the color classes of their parents. When they first flower off colors are transplanted into their proper class. Some colors may be missed when rogueing. The prevailing color of Amaryllis is red in a multitude of shades that includes red, crimson, scarlet, rose, pink, orange, salmon or even purple. No two people will agree about color classifications.

Our guarantee of Amaryllis is that you will like and want to keep the Amaryllis we send you. We don't say "If the flower is not exactly your ideal of the proper color, keep it anyway and we will refund your money." Who pays for these free bulbs? Does the dealer lose this value or do those customers who keep their bulbs and pay for them, pay enough to cover such losses? Anyone knows that profit is essential to business. If you do not approve the Amaryllis you receive, return it at once, when the flowers exhibit their full quality to you. Do not wait one month to do this. One customer after two years of mismanagement, decided she did not like the bulbs and wanted to return remnants the size of marbles. Another asked replacement without return, several years later. We assure you that such losses of replacements are not added to the prices of our bulbs. Pack the bulb carefully if you wish it replaced and send us the same amount of postage which you have paid and we will return another bulb with the same guarantee. Not more than one or two kicks are received per 1000 bulbs sold.

**Select Strains. Assorted Colors.** 2½" diam. up. 90c ea., 3 for \$2.50. \$9.00 doz. Wholesale, \$65.00 per 100 f.o.b. express.

**Select Strains, Near White.** In breeding for pure white from pure white parents, Howard and Smith rejected all that showed color and placed them in this class. The coloration varies from very slight to medium but always much less than in White Backgrounds. The quality is better than most imported pure white. If you grow the seed you can get some pure whites for your trouble. Only it is not trouble, it's fun. 2½" up, \$3.00. 3 for \$8.00. \$30.00 doz.

**Select Strains. Red, Crimson or Scarlet.** 2½" up \$1.00 ea. 3 for \$2.75. \$11.00 doz. Wholesale, \$75.00 per 100, f.o.b. express.

**Select Strains, large sizes.** We offer these in two classes. **White Background**, these were marked in the field. Prices, 3"-3½", \$1.75. 3 for \$5.00. **Assorted Colors**, very few if any are White Background. They include all shades of red. Prices, 3"-3½", \$1.50, 3 for \$4.25. 3½" up \$2.00 ea. The 2½" bulbs give 1 or 2 flower scapes but these large bulbs give at least 2 but more often 3 and sometimes more. They grow better and make more offsets.

**Houdyshel's Hardy Hybrids.** These are not hardy outdoors in the colder northern states but as far north as North Carolina, Washington, D. C., Oklahoma and even So. Kansas these have proven winter hardy if covered by 4" or 5" of soil and given a good winter mulch of straw. Possibly with a pile of brush above the straw they might be wintered in the garden further north.

This an extremely vigorous, rapid growing and multiplying strain and equally prolific with flowers. Most of them are similar in color, orange scarlet with white throat and green keel. An ideal strain for outside planting and landscape effects. Their bright vivid color "hits you in the eye." Altho not an exhibition type, many will like them in pots, where they are easier to grow than the more aristocratic hybrids. 75c ea. \$7.50 per doz.

**Amaryllis Seed.** We have a small amount of our 1950 crop. This will still grow if planted soon altho the percentage of germination will be a little smaller. It will grow well and if you plant now instead of waiting for 1951 crop you gain 6 months growing time and should have flowers one year earlier than if you wait for 1951 seed. We offer it at half price and you should get more plants per price unit. These are Select Strains, all colors. Prices, 100 seed for 50c. 250 for \$1.00. 1000 seed for \$3.50, until sold out. **Culture.** Plant seed as soon as possible. We recommend large, 8" or 10" shallow clay pans instead of standard pots. Culture directions are in the next paragraph.

**Plant Breeding** is an interesting science and art. Undertaken as a hobby, it has often resulted in fame. It will involve and develop great skill, ideals of beauty, good taste and intelligence. I suggest you start with our Select Strains. Get several bulbs and use the pollen only from those you like the best. Cross pollination is easily accomplished by placing the powdery pollen borne by the six stamens on the stigma in the center. The stigma when ready for pollen will usually be opened into three parts. When the seed pod is ripe it bursts open and may be removed and dried. Plant the seed (soon) in a fine sandy loam containing plenty of humus. Do not use peat. Cover seed about ½". Seedlings may be grown in pots in house or greenhouse where they will continue to grow all year without a dormant interval until they flower. Usually this requires 2 to 3 years. In the warm south they can be grown outside under the half shade of lath. But frost usually destroys foliage in winter and cool nights interrupt growth, slowing development. Fertilize with Spoonit once a month.

**Brunsvigia rosea**, *Lycoris aurea*, *purpurea*, *radiata*, and *squamigera* and all the *Nerine* species can be moved about June to July. Unfortunately too many people do not like to work in the gardens in the summer, especially to plant bulbs. When we list them in the spring we sell too few to pay for the space used in catalog altho that is the very best time to move these bulbs. If you are an exception, please order these items from our last fall catalog or any former catalog and request they be sent about July 1.

**Clivias.** Altho easy to grow and to flower by the amateur they will always be classed with the aristocrats of flowering bulbs, because the flowers easily place them there.

Clivias have evergreen, strap-like foliage somewhat resembling that of Amaryllis. The flowers are produced in umbels of 10 to 25, in rich and exquisite tones of orange, in March and April. When not in flower the deep rich green foliage and later the red fruits are most ornamental.

**Culture.** They are usually grown in pots even in the south, as more perfect foliage is thus possible, and when in flower one wants them in the

house. We grow them in a lath house, lath spaced  $\frac{1}{2}$ " apart and in garden under Avocado (evergreen) trees, directly in the soil as they are often grown in Calif. When grown thus they make very large clumps. They must have shade with only a few flecks of sunshine, but plenty of light and air.

Clivias must never be dried off or allowed to lose their foliage. Keep them well watered after flowering, all summer and fall. Liquid fertilizer occasionally helps. When growth ceases in late fall rest them by giving them less water. But keep moist enough to prevent wilting of foliage. At this time they should have a cool room with temperatures from above 32° to not much over 50°. Pots should be 5" for a small plant up to 12" for larger. As they grow and increase. Do not divide but shift to larger pots. Drainage must be perfect. Potting soil is described under "General Culture Directions." pH 7 is about right. One cannot guarantee a Clivia to flower the first year after moving tho they usually do.

The foliage of our Clivias, grown outside in the ground, will not be as perfect as that of pot grown plants. But when potted, they replace the old foliage in a few months and become specimen plants. Do not remove any roots.

**Clivia miniata.** Wide open flowers of soft yellow orange. Hardest, \$2.75.

**C. miniata hybrids.** Similar to the species "miniata" in foliage, hardiness, wide open flowers, etc., but there is some variation in color and form of flower. Most of them are in light orange tones. A few are dark and a few have a white throat. Do not express your color preference for any Clivia hybrid as they are not marked. Prices, \$1.00, \$2.00 and \$3.00 each. We believe most of the \$3.00 size will flower this year altho they are not top size. The \$1.00 size should flower in 2 or 3 years.

**C. nobilis hybrids.** These are the finest and best hybrids. The foliage is broad, flowers larger and darker in color. Blooming sizes, \$5.00 and \$6.00. Small plants, \$2.50 and \$3.50. No quantity discounts on Clivias.

**Crinums** are large bulbs and plants. They are indispensable in southern gardens for landscape effect among shrubs and trees. The flowers are useful for cutting and should be grown by all florists who must grow their own flowers. Only C. bulbispermum is quite hardy. Crinum moorei, Powellii alba and Cecil Houdyshel are only a little less hardy and can be grown up to southern Ohio, Mo. and Kan., if planted deep and mulched over winter.

Grown among trees and shrubs, in combination with Daylilies, true Lilies (Liliums), etc., one has a permanent planting that need not be dug up or divided for many years. Other bulbs like colored Callas (also shade loving) that are usually dug and stored in winter may be interspersed. All the above thrive with any good soil. A heavy mulch of manure during summer is excellent for Crinums and as a mulch you can use any kind and even fresh, rather liberally but experiment as to the amount.

In the deep south, plant Crinums shallow, only a few inches deep. In the north deep planting up to 8" or more is necessary for the hardier sorts. Altho they like a little shade, nearly all do well in full sun, except Moorei, which must have shade. They do not like alkaline soils and they will do better if a liberal amount of leaf mould and/or peat be added. Crinums succeed in pots or tubs, but they are too large for small quarters. The tubs may be stored in basement over winter, placed outside in summer.

**Crinum Americanum.** Our only native species. Beautiful, narrow petalled, light pink flowers. Resembles a spider lily. This is a superior clone that does well in California. \$1.50.

**C. bulbispermum.** We have sold this as "Capense," then as "longifolia" but botanists give priority to the present listed name because first given. We are out of the white form, alba, and offer only the pink, rosea. Hardy in north, if planted deep. Small, 50c. Good blooming size \$1.00.

**C. campanulatum.** Belongs to the "Milk and Wine Lily" type. That is, the flowers are white with a bright rose stripe thru center. \$1.00.

**C. Cecil Houdyshel.** Flowers deep rose pink. One of the best hybrids, all qualities considered. It is the same cross as C. Powellii but is much larger,

more robust and instead of flowering in but limited period it is almost a perpetual bloomer. A very large bulb may give as many as 12 scapes in one season. If watered well, a large clump will furnish continuous flowers from spring to fall, making this the most valuable crinum. If planted deep it is reported hardy at Kansas City. Small bulbs, \$1.25. Medium, that will flower the first year, \$2.00. Very large, \$3.00. Our bulbs are larger this year and require more postage. This amount is added to the price.

**C. Ellen Bousanquet.** Large, glowing, dark wine red flowers. The most beautiful crinum. Very large, \$1.50. Blooming size \$1.00.

**C. Erubescens.** Milk and Wine Lily. Red purple center stripe on petals. Small bulbs, 50c. Very large, \$1.00. We will send still larger, extra jumbo bulbs, for \$1.00, 6 for \$5.00 if sent by express, f.o.b.

**C. H. J. Elwes.** Pink, very beautiful. Does not make large bulbs. Small plant more suitable for pots. Tender. Small, \$3.00.

**C. Louis Bousanquet.** Very free flowering thru an unusually long season. Pink flowers on a very tall, erect scape. 50c.

**C. Moorei.** Large pink, bell-shaped flowers in the fall, freely produced. The long neck of the bulb surmounted by rotated leaves give the plant great decorative value. Requires shade. Nearly as hardy as *bulbispermum*. \$1.00 each.

**C. Peach Blow.** A beautiful pink flowering Crinum but here it is a shy bloomer. Small plant suitable for pots, \$5.00.

**C. Powellii alba.** Extra fine pure white. One of the most valuable and beautiful Crinums. Small 50c. Good blooming size \$1.00.

**Eucharis amazonica** (or *grandiflora*). Eucharist Lily. Star of Bethlehem. First collected on banks of Rio Magdalena, Colombia, S. A. Thus are combined three Biblical names in the lore of this flower. There are about 4 pure white, very fragrant flowers in an umbel, there is a cup in center somewhat like that of daffodils, ismene and *hymenocallis*. The foliage is beautiful and plant is decorative at all times. The flowers are useful in bouquets and corsages and often more expensive than orchids, and always more rare.

**Culture.** For pots only. Set bulb with tip above surface, 5" pot. Soil rich sandy loam to which add more coarse sand and a liberal amount of leaf mould or (better) peat. A tablespoonful of bone meal and a handful of small granular charcoal are useful. Requires abundance of water when growing and blooming hence drainage must be perfect. Feed with Spoonit or manure water. This is necessary. Shaded but plenty light and a little sun are needed to make them flower. After flowering or growing 6 mo., rest them in deep shade for 2 months, giving only enough water to prevent loss of foliage. Then increase water and light. A few bulbs bloom at once. The best flowers follow good growth. With experience, one can get two to four crops of flowers in one year. They are greenhouse or warm room plants. And good growth can be made only when minimum temperatures are 65°, tho not killed by lower.

Florida bulbs are diseased. We offer only large imported bulbs for \$1.50 each. 6 for \$8.00. We have a few jumbos for \$2.00 each.

**Elisena longipetala.** Very rare and lovely Peruvian amaryllid. It is related to the Ismene but the pure white flowers are far more delicate and graceful. Culture like Ismene. It can be forced in pots or grown in the garden in summer. Bulbs stored over winter like Glads. It is hardy in the middle-south. \$2.00.

**Habranthus robustus.** Long tubular, lavender pink solitary flowers. Closely related to Amaryllis. A "now and then" bloomer in all seasons if watered well. Hardy in middle south and a good pot bulb. Plant 4" deep. Full sun. 40c ea.

**Haemanthus.** This south African genus is very rare in cultivation. They are hardy only in an almost frost-free climate like So. Calif. or Florida. In their habitat, the following grow in cool, moist forest glades where there is little sun but plenty of light and where breezes keep the air in motion. These are the famous and rare Blood Lilies of South Africa.

**Culture.** They may be grown in pots where not hardy. The soil should be equal parts of loam, coarse sand and peat or leaf mould made thoroly fine. Drainage should be perfect. A tablespoonful of bone meal to each pot is useful. *H. Katherinae* should be planted just under soil surface; *Coccineus* and *carneus* covered about 1". The bulb of *albiflos* may extend about half above soil surface. An abundance of water at all times when growing is required but rather on dry side when dormant. Additional culture information is given with species. All are easy to propagate from the freely produced seed. Grow seed in pots or pans. Plant on top of very sandy, peaty soil, cover with glass.

**Haemanthus Katherinae.** The bright red flowers fill a large rounded umbel often 10" or more in diameter. Broad banana-like foliage. Scarlet seeds follow the flowers. A plant in flower is an unforgettable sight of tropic beauty. The entire plant is of quite large proportions, the foliage and flower umbel reaching a height of 30" to 36". Introduced from Natal in 1877, they are yet very rare. Give them an 8" or 10" pot. Under best culture the tops remain green until Jan., when the neck splits due to pressure of new growth. At that time we begin to ship and until about Apr. 1. As it is not safe to mail during freezing weather to north, mail shipment must be deferred until safe. Express is always safe. If wanted that way, deduct 50c from the price, as my share of delivery cost. Good blooming size, \$5.00, 6 for \$24.00. By express, deduct \$2.00 for six bulbs. Top size, \$7.50 ea. Two for \$14.00. We can never grow enough *Katherinae* and bought 75 this year from a wholesale nursery. Due to death of the owner they are available this year only at this low price as they are discontinuing. Next year we shall be unable to buy any. They may not be available at any price. If any, they will cost more.

**H. albiflos.** Two or more rather stiff erect evergreen leaves. The small white flowers, 100 or more, are in a dense umbel. A rare and unusual plant. It is evergreen and must never be dried off. Flowers in late fall. Leaves burn badly in sun. \$2.00. Delivery any time.

**H. coccineus.** This is the true Blood Lily altho all *Haemanthus* are referred to as Blood Lilies even tho one has white and another flesh pink flowers. This very rare Amaryllid usually has only two semi-erect leaves. They grow all winter after which they should be entirely dry until about Aug. Then watered only a little at first. The flower scape appears, preceding foliage. This scape furnishes part of the floral display, being marked by contrasting red spots on a bright background. The 4" umbel consists of very numerous small, densely placed red flowers. These are followed by the fruits which turn red upon ripening. Each fruit will contain one or more large seeds. In the south plant the bulbs with top even with soil surface. Half shade. Easy in pots where half of bulb may be above soil. Stock very limited. Order early and reserve your bulb. \$3.00 ea. Jumbo size that should give 2 or 3 flower scapes and a lot of seed, \$4.00.

Most of our customers wait until fall to order this rare and desirable bulb. By ordering in time for us to deliver before Aug. 1, you will have much greater success and will see the flower at its best. A well established bulb will also set more seed. Plant as many seed as you can.

**H. carneus.** The two leaves are prostrate. The flowers are larger and less numerous than in *H. coccineus* and are flesh colored. The growth habits are similar. Delivery late spring to about Aug. 1. Price \$2.50.

**H. Natalensis.** The rarest here listed. The plant is similar in outline and proportions to *Katherinae* but more colorful. The scale leaves at base of stem are richly colored and spotted and flower scape is spotted. The very dense umbel, about 4" wide, is vivid scarlet. One of the finest Blood Lilies. They seldom flower outside in So. Calif. To get flowers the bulbs should be dug after tops die. After a few weeks rest, they may be potted and flowered in the house or greenhouse. Use 8" pots, quite sandy soil with leaf mould. Either enrich the soil or fertilize once a month with Spoonit or manure water. We shift to garden in spring to complete growth. For introduction we are setting a price this year that is much lower than next year's will be.

Large bulbs, \$4.00. They should be potted at once and before Mar. 1, for blooming this season.

**Hemerocallis. Daylily.** The flowers range in color from dark bronzy red, thru pastel tones of pink to orange and yellow. They are borne on a branching scape well above the foliage.

The Greek name, meaning "beautiful for a day," refers to an individual flower. But these are so freely produced, thru a long period, that "beautiful every day" would be more apt, as a collection of several sorts show masses of flowers thruout the spring, summer and fall and here we often have some winter flowers. The modern sobriquet of "The Perennial Supreme" is well deserved.

**Culture.** While their beauty is their greatest recommendation, their easy culture and hardiness add to their desirability. I have known abandoned plants here, where we have arid, hot summers, to persist for years. They grow well in full sun. Slight shade is better. If given constant moisture about their roots, preserving this and coolness of the earth with a good mulch, the plants are ideally situated and respond with generosity. They are hardy even in severe winters in the north. They are fibrous rooted, not bulbs, and must be planted at once when received. Altho they can be moved any time, it is better to ship from late fall to early spring.

They are an almost perfect border or landscape plant, never have to be dug and replanted. All that you must do for them is keep the weeds down and water. A heavy leafy mulch helps every way.

In Daylilies, the sepals are colored and petal-like and are an essential part of the floral display. Best planting time is fall, winter or spring. They can be planted in summer also.

In the following list those plants known to be evergreen here are marked E. These often flower here in winter.

**Hemerocallis Araby.** 30". E. A lovely pastel color, with the effect of bronze on gold dust. Blooms early. 75c.

**H. Bijou.** 24". June-July. Orange, overcast with rich fulvous red. 50c.

**H. Calypso.** Large, fragrant lemon yellow flowers. Opens in evening. 42". June-August. 30c ea.

**H. Cecil Houdyshel.** E. A Dr. Traub origination. A deep crimson with an old copper shade that makes it outstanding in our garden. Slight shade gives better color to flowers. 3 ft. June-July. \$1.00.

**H. Chengtu.** E. Brilliant coppery orange-red with carmine mid-zone. 3 ft. July-Sept. 50c.

**H. Cinnabar.** E. Cinnamon sprinkled with orange, gold-glistening. 30". July-Aug. 50c.

**H. Crown Prince.** E. Color like Mikado. 30". June-Aug. 25c ea. Per doz. \$2.25.

**H. Dauntless.** E. Cadmium yellow. Fulvous red blended in mid-zones. Pastel effect. 30". June-Aug. 75c.

**H. E. A. Bowles.** 48". Large ruffled flowers of deep red-orange blended with gold. Early. 75c.

**H. Florham.** E. Still popular old hybrid. Large, golden yellow. May-July. 50c.

**H. Florida.** Pastel shades. Light chrome yellow with rose blush. Darker mid-zone. July-Aug. \$1.50.

**H. Iris Perry.** E. 36". July-Sept. Orange-bronze. 50c.

**H. Kwanso.** The Double Orange Daylily. 25c ea. 3 for 50c.

**H. Linda.** E. Petals, ruffled golden yellow, flecked with cinnamon, and a rose zone. Sepals, pure yellow. Very lovely. June-July. 50c.

**H. Mandarin.** E. 48". Lemon yellow. June-July. 50c.

**H. Margaret Perry.** E. Brilliant orange-scarlet. 4 ft. July-Aug. 35c.

**H. Mikado.** E. Orange with mahogany-red zone. A favorite. 3 ft. May-July. 35c.

**H. Nubiana.** E. Dark chocolate-red with yellow stripe in petals. One of the darkest varieties. 2 ft. 60c.

**H. Radiant.** Rich orange. 42". Junè-July. 50c.

**H. Rosita.** E. Near carmine-crimson with coppery red tone. 36". Part shade preferred. \$1.00.

**H. Serenade.** Rose-fulvous markings on apricot cream. Faintly overcast darker. 4 ft. June-July. 75c.

**H. Sibyl.** E. Dark purple-red petals, lighter sepals. \$2.00.

**H. Soudan.** Lemon yellow. Broad wavy petals and sepals. 3 ft. June-July. 50c.

**H. Vesta.** E. Deep orange with glistening gold sheen. 30". May-July. 50c.

**H. Vulcan.** E. Dark maroon-red. 30". July-Aug. \$1.00.

**H. Wau Bun.** Large apricot flowers, sprinkled fulvous red. The twisted and curved petals add to its beauty. 75c.

**Ismene.** Their large, very fragrant, white flowers are very desirable for cutting and are seen often in florists' shops. The flowers are about the size of daffodils and because there is a cup in the center, they are often called "Peruvian Daffodils."

**Culture.** They are hardy only in the south. With deep planting they may be grown as far north as the Carolinas, where they should be covered by 5" of soil and well mulched in winter. Probably safe to leave in the ground in Oklahoma. In the north, plant in the garden in early spring and after frost cuts down the tops, dig and dry the bulbs well, then store at a temperature over 55°. If too cold in storage the bulbs will not flower and they may rot in storage. Even in the south they must be covered by 4" of soil. Ismene can also be grown in pots.

**Ismene calathina.** Not available this year.

**I. festalis.** An Ismene-Elisena hybrid. Pure white, no green markings. Long, narrow petals give great refinement and beauty to the flowers. No white Amaryllid is more elegant. \$1.75.

**I. Sulphur Queen.** Hybrid of I. calathina and I. Amancaes. Light yellow. Very rare, beautiful and most desirable. 75c ea., \$7.00 per doz.

**I. macleana.** A very tiny Ismene on long stems. Probably the hardiest. 25c. \$2.25 doz.

**Collection** of 3 var. Ismene, \$2.50. Note Elisena after Eucharis.

**Sprekelia formosissima superba.** Orchid amaryllis. Deep crimson flowers in orchid-like form. Much larger than common type, better color, more flowers. Evergreen. Fine in pots. Culture like Amaryllis. 50c and 75c ea.

**Tulbaghia violaceae.** Small cousin to Agapanthus. Mauve flowers produced thruout the year, a true ever-bloomer. Foliage has garlic odor if bruised. An acquisition for pot culture. 25c ea. 5 for \$1.00. \$2.00 per doz. Delivery all year.

**T. fragrans.** This much larger species has a large, true bulb, with glaucous green foliage, 18" long and 1" wide. It has no allium odor. The plant is a profuse winter bloomer in a cool room, with a few flowers in summer. It was introduced to this country only a very few years ago. It has larger, more fragrant flowers than violaceae in the same color. Evergreen. Since it increases rapidly the bulbs are a good investment for dealers or for plant exchanging. \$2.00. Delivery all year.

**Zephyranthes.** Fairy lilies. The smallest Amaryllid, 6"-12" tall. Fine in beds or borders. Hardy in middle south. In north dig and store. They may be grown in pots. Give acid soil, sandy loam with leaf mould or peat. Full sun or slight shade.

**Zephyranthes grandiflora.** The largest Zephyranthes and the best pink. It is very easy to grow. In the south, its habit of flowering every time it rains in summer gives it the name of Pink Rain Lily. 15c ea.

**Z. rosea.** Small, but very lovely deep pink flowers. They do not do well in very alkaline soils. It should be neutral to mildly acid. Fine in pots, about 8 or 10 in a 5" pot. 15c ea. 10 for \$1.25.

**The Alliae,** or Onions, are now classed in Amaryllidaceae. The following are ornamental and useful for seasoning salads, soups or meats.

**Allium schoenoprasum.** True Chives. Small clumps, 10c. 3 for 25c.

**A. tuberosum. Japanese Garlic.** Deliciously flavored leaves. Evergreen and probably not hardy in north. 25c. (Try wintering in a pot.)

## IRIS FAMILY — Iridaceae

Iridaceae include the very large genus Iris as well as Gladiolus, Marica and many that we list in the fall catalogs.

**Tall Bearded Iris** were formerly called "Flags." Only white and violet were known to me in my youth. Not even a vivid imagination could have guessed at their modern development. The modern gorgeous reds, pinks, yellows, orange, in solid colors, blends, variegatas or plicatas are amazing.

Altho they can be planted any time, much the better time is soon after flowering. We prefer to deliver from June to fall.

We have about 500 varieties and can list 250 or more. The space available in this catalog does not permit listing more than 25. But all those who buy from this list will be placed on a new Iris mailing list. In the spring we will send a price list of all, no illustrations. A post card request will bring it also. If you prefer we can send 1950 Spring Catalog and 1949, "Iris 400" Price List, as we have a very limited number, you must send 10c for the two. Deductible from order. We could not meet the demand for a free distribution.

Many consider that the larger rhizomes are the better. These may be produced by heavy irrigation, feeding and wide planting. But the ones that start first and grow fastest are smaller, hard rhizomes as many of our customers have found by comparing results. Our So. Calif. grown plants are ready for delivery earlier and can make more growth than northern grown plants.

**Culture.** Cover rhizomes about 1". Full sun exposure is best. Do not fertilize. Rest plants 2 mo. in fall for heavy spring bloom.

In following list, height is mentioned in inches. S. for standards or upright petals. F. falls or lower petals.

So. Calif. customers are invited to visit our field about April to June and make selections from those in bloom. Blooming date varies because the weather varies. If you file a self addressed post card we will notify you at the best time.

**Airy Dream.** 42". Ruffled orchid pink. 40c.

**Aldura.** 30". Blue and white plicata. Best. \$1.00.

**Arctic.** 40". Creamy white, golden throat. 75c.

**Buechley Giant.** Very tall, massive, perfect form, blue fls. 25c.

**Cheorio.** S. lustrous tan. F. brilliant velvety red. 40c.

**Chief Poking Fire.** 34". Red brown velvet. \$1.50.

**China Lady.** 38". Glistening ivory. \$1.00.

**China Maid.** 48". Blend of pink, gold bronze and rosy lilac. 50c.

**Dauntless.** Fine, tall red self. 35c.

**Extravaganza.** S. cream. F. white, edged copper red. Sensational. \$6.00.

**Fashion Plate.** 36". Edges crocus lavender paling to center. \$4.50.

**Franconia.** Gigantic white. Perfect form. \$3.50.

**Gen. MacArthur.** 36". Very large, creamy white. \$1.00.

**Golden Cataract.** Deep golden yellow. Nearest everblooming. 35c.

**Grand Marshal.** 42". Metallic gold color. \$1.50.

**Happy Days.** Largest, tallest, best yellow. 40c.

**King Juba.** Tall. Golden standards. Velvet red falls. 45c.

**L. Merton Gage.** 40". Raspberry pink, cream yellow blend. \$1.00.

**Los Angeles.** Tall, large plicata. Snow white, edged blue. 25c.

**Mabel Taft.** Giant, blue bicolor. 25c.

**Persia.** Bright blue, smoky blue blend. Persian rug color. Fragrant. 35c.

**Purissima.** A perfect white. Gigantic fls. 25c.

**Red Dominion.** Deep red. One of best reds. 45c.

**San Francisco.** 44". Giant plicata. Lav. and white. Dykes Med. 25c.

**Theme.** Unusual blend. S. bronze gray and lav. F. bronze tan and petunia violet. Fragrant. 50c.

## Gladiolus

**How to Grow Gladiolus.** Glads planted Nov. 15 to Mar. 1 in Southern California and thruout the south (a little later in Northern California and early as possible in spring in the east) are reasonably sure to escape the attack of thrips. Our Glad bulbs are especially grown for this purpose, matured early and dug in August. But if you plant recently dug bulbs you will gain nothing; they will continue their rest of three months before starting.

**Thrips** are very small insects that suck the juices from the plant. They cause the flowers to wither or appear burned, and appear only after weather becomes warm. To avoid the damage thrips do, four measures are effective. Plant early. Plant clean, treated bulbs. Keep them reasonably moist and well cultivated, with no weeds. Dust with Chlordane. A hand duster can be bought from most local feed or seed stores. Probably Chlordane also. If not, try Leffingwell Co., La Verne, Calif., or any of their many local places. Chlordane tho toxic is safe to use but do not use on vegetables. Be careful not to breathe much of the dust. It also kills ants and other pests.

Dust Gladiolus 3 or 4 times before flowering. Begin when plants are 6" or 8" tall. Even tho you plant late you will have no thrips damage. Even in hot So. Calif. you can have good Gladiolus flowers all summer.

Plant large bulbs (really "corms") 4" or 5" deep. Half inch bulbs, 3". Bulblets 2". Twice their diameter apart. Rows 20" apart, in full sun exposure. Best soil is sandy loam but they do very well in heavy soils, especially if leaf mould and compost is added. Alkaline soils do not produce good Gladiolus. Correct them by addition of peat or leaf mould. Use only well decayed manure, if any. Spoonit is an excellent, mildly acid fertilizer.

**Sizes.** Size No. 1, 1½" up. No. 2, 1¼" to 1½". No. 3, 1" to 1¼". No. 4, ¾" to 1", No. 5, ½" to ¾". No. 6, all under ½". In the following list L. means large, No. 1 or No. 2. M. means medium, No. 3 or 4. S. or small are No. 5 or 6. If not designated, the bulbs are large. Smallest sizes bloom and often bulblets. No. 2 and 3 are preferred for growing commercial cut flowers.

**Prices** are for one bulb. Multiply by 10 for the price of one doz. 6 at doz. rate. 100 cost 70 times the cost of one or 7 times the cost of one dozen.

We grow only the best sorts, that produce high quality cut flowers as we sell them to florists. Varieties subject to disease or that produce unsalable flowers are rejected. In the following list we have added a number of the very latest sorts that you will all want to try. Please note that our 1951 prices are much lower on these than you will find in 1950 catalogs.

**Ballad.** Lovely ruffled light rose. L. 8c.

**Birch Red.** The best deep red. 1" bulbs, 50c ea.

**Burma.** Very deep rose, heavily ruffled. L. 12c.

**Capehart.** Early, salmon rose. No. 1, 7c. L. 5c.

**Chamouny.** Beautiful bright rose with silver edge. L. 6c.

**Elizabeth The Queen.** Very large ruffled lavender. The finest lavender and the most beautiful gladiolus. L. 10c.

**Ethel Cave Cole.** The florists' favorite pink. Large fls. No. 1 and jumbo, 10c. L. 6c. 60c doz.

**Gold Dust.** Very early clear yellow. L. 8c.

**Huntress.** Very early, ruffled lavender pink. L. 15c.

**Leading Lady.** The largest, finest white but not earliest or whitest. Light cream tint. Has highest record of any present glad for winning first prizes and "grand champion" in shows. L. 15c, 2 for 25c. \$1.20 doz.

**Los Angeles.** A good cool weather grower and used for forcing in greenhouses. Planted early to bloom early it makes a nice show in gardens as I've counted as many as 100 flowers from one bulb. Important to use in breeding because of sturdy health. Plant farther apart. L. 5c. No. 1 or jumbo 8c.

**Margaret Beaton.** Large white with scarlet throat. L. 6c. \$3.50 per 100 by express, f.o.b.

**Miss Wisconsin.** Bright rose. One of the most beautiful. L. 15c.

**Ogarita.** Salmon with cream throat. Will grow 6 ft. tall with 7" flowers. 10 open at one time. L. 8c.

**Oregon Gold.** Huge pure yellow ruffled flowers on a 5 ft. spike. Up to 10 open. L. 10c.

**Pacifica.** Early, tall large white. L. 7c.

**Red Charm.** At present, the florists' choice for red. L. 10c.

**Red Unknown.** A very fine early red. L. 8c. 75c doz.

**Snow Princess.** Whitest and earliest. L. 8c.

**Spic and Span.** Ruffled, deep pink. Believed to be best introduction in last 4 years. Tall, many open at one time, fine propagator. L. 40c.

**Assorted varieties.** Made up from surpluses, lost labels, etc., not claimed to be a balanced mixture, but you will get good varieties. 1" and up, 5c. 50c doz. \$3.50 per 100.

The above list includes the very latest, most outstanding and proven Gladiolus at prices much under 1950 prices.

We deliver when safe to ship and in time for you to plant early. At once, to the south. Be sure to order before Apr. 1 or we may have very few left.

### **Marica Gracilis, Walking Iris**

or Apostle plant. White and blue, fugitive 2" flowers in late winter. Following flowers are two small plants that bend over the leaf like scape and take root, one step each year. Nearly full shade, soil half leaf mould or peat, always moist. Tender tropical but nice house plant. 75c ea.

### **LILY FAMILY — Liliaceae**

The type species is *Lilium*, or true Lily. Many call Crinums, Callas, Cannas, or any bulbs "Lilies," but this is an error.

**Gloriosa. Climbing Lily.** The flowers resemble true lilies but surpass most of them in their gorgeous beauty and high coloring. They propagate by tubers instead of bulbs. The stem is branching and heavy and must be supported.

**Culture.** They must have sandy soil, full sun or slight shade, plenty of water, perfect drainage. We usually plant before March 1, but sometimes as late as May. They need a long season. Plant 4" deep. Horizontal position. In the north they may be started early in pots and shifted. Do not break earth ball when shifting.

**Gloriosa rothschildiana.** It deserves the name **Glory Lily**. Very vivid colors, red with yellow markings, turning later to deep red and then deep rose. 4 ft. tall. We offer this year a superior variety that usually stands erect without support. \$1.50. Extra large that will flower earlier and give many more flowers, \$2.25.

### **OXALIS FAMILY — Oxalidaceae**

The following are mostly summer growers.

**Culture.** Oxalis do best in sandy soil. They do very well also in poor soil. In pots, the drainage should be good and some coarse sand in soil will help. Most Oxalis like nearly full sun. Summer growers make lovely garden plants and flowers.

**Oxalis brasiliensis.** Bright magenta fls. Starts growing in winter and continues to late spring. Bulbs, 35c.

**O. crassipes.** Tuberous. Bright rose fls. Evergreen and everblooming. Usually starts slowly. 15c ea. \$1.00 doz.

**O. crassipes alba.** White variety of above. 25c ea. \$2.00 doz.

**O. lasiandra.** Lovely foliage with 7 or 8 leaflets. Rosy carmine fls. Fine in garden. Delivery Apr. 1. 10c ea. 75c doz.

**O. Regnalli.** Large, truncate leaves, reddish on under side. Trifoliate. Nearly or quite evergreen and everblooming. Large white fls. Tuberous rooted. Delivery April 1. \$1.00 ea.

## THE CALLA LILY FAMILY — Araceae

This family contains the so-called Calla Lilies or *Zantedeschia*, Fancy Leaf Caladium, *Sauromatum*, *Amorphophallus*, *Arum*, *Drunculus*, *Anthurium*, *Spathiphyllum*, etc. All are shade plants and need acid soils.

**Zantedeschias** are not true Callas, tho this is their common name. **Culture.** At this time and up to Apr. 1, you may plant or pot the pink and yellow callas. They need a mildly acid soil of sandy loam and peat. In pots, cover only 2" but in the ground in Calif. or the deep south, they may be planted about 3" deep. They need about half shade. Keep barely moist until growth is well started then water freely. Cool temperatures suit them best.

**Zantedeschia rehmanni superba.** Improved light pink form. These are a large size, not small unimproved type that is offered at low prices. 50c ea. 3 for \$1.25.

**Z. elliotiana.** Deep golden yellow. If not given enough sun they become tall and spindling and fail to flower. 30c ea. 4 for \$1.00.

**Sauromatum guttatum, var. venosum. Snake Lily.** The narrow, 1' to 2' long spotted spathe, undulating, appears to wriggle alarmingly. I've seen persons jump on first sight. Hardy only if well protected and mulched. May be grown in greenhouse. Must have acid soil, shade. Jumbo bulbs, \$2.00. Large, \$1.50.

**Amorphophallus Rivieri.** More correctly it is **Hydrosme Rivieri**. Devil's Tongue. To 4' tall, very broad decomound leaves. Flower spathe, 1' long, green, spotted white and purple. Like all aroids, they are shade plants, requiring acid soil. Hardy in south under trees. In north they are grown in large pots or tubs. Foliage of this and *Sauromatum* is richly tropical. Usually, only largest tubers of these will flower. They frequently fail the first year, therefore we offer ours that are on small side, with the saving in cost, it will pay to grow them on and the foliage is worth the cost. 1½"-2", \$1.00. 2"-2½", \$1.50. 2½"-3", \$2.00.

**Anthurium** and **Spathiphyllum** are close relatives and formerly in same genus. Formerly too high priced for most of us but now more plentiful and within our reach. Flowers are much used by florists. The colors range from coral, orange, pink, red to sometimes white. The waxed or lacquered appearance on these colors gives a resplendency unequaled. Mature plants flower every two months and each flower lasts 6 weeks or more.

**Culture.** These are tender tropical plants, suitable only for pot culture. Soil formula, ½ peat, ¼ leaf mould, preferably oak well rotted and fine, ¼ coarse sand or sponge rock. A rounded tablespoonful of powdered dairy manure to a 5" pot is recommended but we prefer Spoonit or liquid manure applied once a month after well established. The minimum night temp. preferred is 60° or more. Higher in day time. 45° to 100° will do little harm. Air should be very humid. Daily spraying of foliage will increase humidity. They should never become dry. Water about every two days.

When you receive your plants, they will usually be set low in 4" or 5" pots. As plants develop you will notice new roots on surface of compost. Add compost described or sphagnum to cover these. This builds up compost level. When full shift to next size pot and again pot low.

As your plants grow larger, you will get larger flowers.

**Shipping.** Last fall we gave you choice of loose rooted plants sent by mail. We find that loose rooted plants lose much time in becoming reestablished. Not a customer has reported any loss of plants or receipt in bad order, but for best results we prefer to offer now only potted plants at the same price, \$3.75 by express f.o.b. If you must have them loose rooted, postpaid, send 25c less than listed prices.

**Anthurium andraeanum. Shaffer hybrids.** These are the best strain, improved by breeding and selection. Fls. on large plants up to 6" long. Colors range from red, orange, rose, coral to pink and rarely white. Named colors are not offered. Assorted colors, blooming size plants, \$3.75.

**A. scherzerianum.** This species does not make as large plants or flowers as *andraeanum*, but they are interesting and pretty. Their advantage is their greater hardiness. They are easier for amateurs and as house plants. They

are not quite so demanding about temperature and humidity. We offered small plants in the fall but later were able to buy full blooming size for a higher price. Assorted colors, \$3.75.

**Spathiphyllum clevelandi.** Formerly classed as an Anthurium. Flowers are white, tho light green are said to occur. Our plants of these are larger and many are now blooming. They are probably more profuse and apparently very easy to grow, less exacting. \$3.75.

**Fancy Leaf Caladiums** are the most gorgeous of all foliage plants. Every leaf is like a flower, as vivid in color as any rose, tulip, tigridia or any other. I have been growing ornamental plants for as long as the average human life. I have seen most everything, but I have never seen an equal for Fancy Leaf Caladiums. Last year we lacked 1000 or more of enough to fill orders. Therefore we doubled our purchase this year. They were grown for us by one of the best Florida growers. He produces perfect tubers. We will not handle any but the best. Many growers produce inferior stock, sometimes infested by rots. Breeders plant seed in order to get new sorts and more than 1000 must be rejected for every good one produced. When you buy Caladiums under our price, they must be either smaller tubers or from such sources described above.

**Culture.** If you wish to store bulbs awhile before planting, pack in dry peat and store at a minimum of 60° temperature. 70° is better. They will keep thus to May 1 or even June 1. If they sprout, plant at once.

**Caladiums** like heat and must have it. The best starting and growing temperature is 85° or higher. They will, however, start and grow in a comfortably warm room. Soil formula:  $\frac{1}{3}$  rich sandy loam;  $\frac{1}{3}$  well rotted dairy manure;  $\frac{1}{3}$  fine, rotted leaf mould or peat. Add a tablespoonful of bone meal to a 5" to 7" pot. Set bulbs 1" under soil surface. We prefer to have only pure peat or sand to touch the bulbs. Don't forget perfect drainage. Read Potting Directions. Keep barely moist until sprouts appear. Water liberally when in full growth. If you allow them to become dry, foliage will be lost. We start Caladiums, Begonias, Gloxinias, Achimines, Haemanthus and a lot more in the same house where we grow Saintpaulias, Cattleyas, Anthuriums and other tropicals but later Begonias and Achimines are moved to a cooler greenhouse or a lath house. They are shade plants, about half exposure.

**Houdyshel Method.** I have my best success in starting and growing Caladiums, Gloxinias, Achimines, Saintpaulias, Eucharis and most shade, acid loving plants in a mixture of peat and sphagnum with a little sponge rock or sharp sand. You may prefer to add a little rich soil, a tablespoonful each of dairy manure and/or bone meal, but fertilizer not in contact with bulbs. When growing, Caladiums need frequent feeding. I prefer to fertilize after some growth is made, with Spoonit solution. Note additional advice under Saintpaulias, Achimines, etc.

After June 1, often earlier, it will be easy to maintain right temperature for starting or growing Caladiums. When growth is well advanced they will also have more tolerance. In our very dry climate, growing out doors is difficult but possible if well watered daily.

Greenhouse culture is ideal. In the fall, when outer leaves begin to yellow, dry them off. When the foliage is lost the pots may be laid on their sides. They may be stored in pots in a warm room, never colder than 60°. The greenhouse is a good place to store.

We have most enthusiastic reports from customers who buy our Caladiums. That is because we know the good growers and the poor ones in Florida. We handle only large tubers. We store them right and ship correctly when weather permits. So enthused are our customers that our list this year is longer than ever, 34 gorgeous varieties.

1. **Ace of Hearts.** Rose center, green border, scarlet ribs. Dwarf.
2. **Attala.** Vivid green ground, blotched pink, crimson veins.
3. **Candidum.** Popular green and white pot plant var.
4. **Cleo.** Green ground, pink, white and yellow veins, crimson center.
5. **Crimson Wave.** Crimson, green border. Lg. crinkled, transparent lvs.

6. **Dr. M. Cook.** Dark moss green, plum red center, red ribs. Lg. crumpled leaf.

7. **Edith Meade.** Lg. snow white cen., red ribs, green border.

8. **Firebrand.** Cream colored leaf, red center. Dwarf.

9. **Hortulania.** Bright crimson red, bluish tint. Very showy.

10. **Itacapus.** Dark red, small bright spots. Fine in pots.

11. **Jessie Thayer.** Flushed pink and white, red veins. Robust growth.

12. **John Peed.** Red center and veins. Round leaves.

13. **Keystone.** Green leaves, speckled pink. Pink veins and ribs.

14. **Lord Derby.** Transparent, rose leaves, green border.

15. **Macahyba.** Bronze, green and red rays, pink and white splashes.

16. **Madam Truall.** Purple red, deeper ribs, bronze edges.

17. **Marie Moir.** White, green veins, greenish margin, red spots.

18. **Mrs. Arno H. Nehrling.** Bronze-red shading to copper brown pointed leaves. Dwarf.

19. **Mrs. Fanny Munson.** Bright crimson, scarlet ribs, narrow green edge.

20. **Mrs. F. Sanders.** Deep rose on green. Heavily blotched.

21. **Mrs. W. B. Haldemann.** Red center, narrow green edge.

22. **Pink Cloud.** Crumpled leaf, shaded pink, mottled. Good grower.

23. **Poecile Anglais.** Deep crimson, bordered metallic green.

24. **Reconcavo.** Deep red center, darker red veins and stem.

25. **Red Ensign.** Bright metallic red, green margin.

26. **Red Flare.** Scarlet, blotched two shades of green.

27. **Richard Deckhard.** Rose, crimson ribs, pink blotched, golden tint.

28. **Rising Sun.** Gold tinted ground, red center, red ribs.

29. **Scarlet Pimpernelle.** Scarlet, straw yellow margin.

30. **Sea Gull.** Dwarf, green leaves, white center and midribs.

31. **Sorocoba.** Transparent, silver white, suffused pink. Green ribs, veins and edge.

32. **Spangled Banner.** Easy grower. Red, dark ribs, pink spots.

33. **Thomas Tomlinson.** Brilliant red, green margin, Showy.

34. **Triomphe De L'Exposition.** Crimson, scarlet ribs on green ground.

To every description above many more adjectives are well deserved, such as fascinating, gorgeous, magnificent, a poet's dream, an artist's delight, etc. Space does not permit full justice to their beauty. I doubt if I could do it anyway for after all they are indescribable.

These are all large tubers, mostly 2" or 2½". Some may even be 3". Size attained varies with the varieties.

**Prices:** I warned you they would be higher this year, but I am happy to say that we can still offer the same single and dozen rates. The wholesale costs are higher. Transportation from Florida costs us more. The cost of delivery to you is greater. Thus I cannot make quite as great a quantity reduction for over one dozen. They are 35c ea., \$3.60 per doz., labelled. Assorted bulbs, \$3.45 doz.

**Complete Collection** of 34 var., \$9.75, labelled. Please order by number only. We will label the same way. But use correct name for pot labels. We can supply celluloid pot labels that are permanent for 3c ea., any quantity. Wood labels scarcely last one season.

Caladiums cannot be shipped by mail in very cold weather. We defer shipment until safe. But order early and we will reserve varieties wanted. We can ship by express any time, safely.

## THE GESNARIA FAMILY — Gesneriaceae

Includes Gloxinia, Saintpaulia, Smithiantha, etc.

**Gloxinia.** The correct botanical name is Sinnigia. They are natives of tropical Brazil, which indicates their culture. The tubers are dormant and can usually be had only from Jan. to about April. Some sorts are likely to be sold out in late Mar. Order early or name substitutes.

**How to Grow Gloxinias.** If you need to store tubers it must be in a warm room, about 55°, packed in perfectly dry peat or sand, not exposed to air or moisture. Pot the tubers in Feb. or Mar. April will do if you can get the

tubers. Read Potting Directions on a previous page. Soil formula:  $\frac{1}{3}$  of each peat, fibrous loam or wood's earth and coarse sand. This is a good soil but I prefer the "Houdyshel Method" described under Caladiums.

A good starting and growing temperature is 60° at night and 70° in day time. We run this nearly 10° higher. Gloxinias are shade plants but they need the proper amount of sun to make well shaped plants and to bloom well. A stocky, vigorous blooming plant is situated correctly. A leggy plant is not getting enough sun.

Keep Gloxinias moist, not soggy when starting and increase moisture when growing well. It is a little better to use tepid water when starting tubers.

If you get water on the foliage, and the sun falls on them before they dry, a spot may result. When well shaded, no harm results. They require high humidity. Protect plants from wind and cold drafts.

I am often asked why one bulb failed to grow when 9 others, planted at the same time and treated the same way, grew. A certain degree of tolerance is possessed by all plants to conditions not wholly ideal. But this tolerance varies with individuals and varieties. If the temperature becomes too low a few times or even one time or if you overwater or other conditions are improper, one or more bulbs may not survive altho others may not appear to be harmed. Many are unable to reason that the fault is their own and not that of the tuber. It is more comfortable to blame the bulbs.

After flowering, gradually withhold water. When tops are dead, give only enough to prevent shriveling of tubers. When growth begins again, gradually increase watering.

We offer American grown 1 $\frac{1}{4}$ "-1 $\frac{1}{2}$ " tubers in the following sorts: **Blanche de Meru**, rose, white throat; **Emperor Frederick**, scarlet, white border; **Emperor William**, violet, white border; **Etoile de Feu**, scarlet; **Mont Blanc**, pure white; **Prince Albert**, frilled, dark violet; **Princess Elizabeth**, blue, white throat; **Roi des Rouges**, frilled, dark crimson; **Tigrinia**, from light rose to dark lavender. Characteristic are the small tiger spots; **Violaceae**, soft violet. Price 50c ea. All 10 var. for \$4.75.

The following two are 1 $\frac{1}{2}$ "-2" tubers. **Pointille**, spotted but not like Tigrinia; **Queen Wilhelminia**, carmine red. Price 75c ea.

The following six are the very latest and best. We know of no source for the purchase of tubers and were obliged to grow our own from expensive seed. Those that have flowered were gorgeous, better than any we have ever before seen. We expected that we might be able to deliver small dormant tubers about Jan. but it may be Mar. before they are dormant. We can only promise that you will get them as soon as they can be shipped and that it will be in time to grow them on for at least late flowering this season. They are worth waiting for and if sent too soon would only lead to disappointment.

**Frederick Benary**. Scarlet, white throat. **Beacon**, rich dark red. **Crimson Glow**, glowing scarlet. **Swiss Emblem**, scarlet and red, white markings. **Merveille**, brilliant red, white edge. **Rose Sensation**, brilliant carmine rose. **Prices**: Largest sizes available, probably not over  $\frac{1}{2}$ " or  $\frac{3}{4}$ " and possibly smaller, but Gloxinias give nice flowers from all sizes and even from seed. \$1.00 ea. All six for \$5.75.

Small tubers of **Assorted Seedlings**, not including any of the 6 above. Same late delivery. 45c ea. \$4.50 doz.

Complete Collection of each item listed, 19 Gloxinia tubers for \$12.00. They may or may not be delivered in one shipment. Divided shipments and variation in sizes will give you a longer blooming period.

**African Violets, Saintpaulias**. Discovered only 60 years ago in equatorial east Africa, they have become our most popular house plant. Their dainty beauty, both foliage and flowers, have so intrigued all who love flowers that national and international societies, robins, clubs and other groups are now devoted to their study, promotion and improvement. There are collectors, fans, breeders, lecturers in every city and town. The plants become more and more popular.

Saintpaulias seem to fit into the conditions of modern life, perfectly. We now have machines to wash, rinse and even partially dry our clothes,

dish washers, mixers, juicers, sweepers, automatic stoves, wall furnaces, streamlined kitchens. Because these reduce spaces necessary, our houses and rooms are smaller. Many more people now live in apartments.

Saintpaulias require only small spaces. They make gardening in a small apartment possible and return a lot of beauty in small quarters. I know a person who lives in a small apartment yet she grows, breeds and sells African Violets. She has originated very choice, important varieties and is already known to fame.

**Culture.** African violets are always in bloom when they are comfortable. For comfort, they need water, food and warmth. At a minimum night temperature of 60° they are comfortable. If below 60° at night or above 85° in the day time they may quit flowering. They do not like sudden changes nor great changes. This means they can live comfortably where you can. But they cannot put on an overcoat or underclothes to keep them warm. The warmth must come from outside. The perfect range of temperature is about 70° at night and 82° daytime.

They like light but very little direct sun. Very early morning or late sun and winter sun but slightly shaded is good. But in mid-day, full sun exposure will harm them. The right degree of light promotes flowers for nearly all plants, perhaps all. If sun exposure is right, foliage will be rich green. Too much sun yellows foliage. Very dark green indicates too little sun.

The best soil is mildly acid. They succeed in a wide variety. We recommend a porous soil, rich in humus that contains enough sharp sand to permit water to drain thru rapidly. Allow them to become slightly dry between waterings. If too wet all the time or the plants too crowded some lower leaves may rot off. Water in early morning with tepid water near the room temperature. A little water on foliage will do no harm if no sun touches them before they become dry. Indeed, washing the foliage is beneficial.

Do not space too closely. Air and light should entirely surround the plants. Keep off the mealy bugs. Plants must be fed. Feed once a month with Spoonit. It is equally good for all house plants. African Violets have language but no words. Learn to understand them, all plants. For further information read Mrs. Wilson's book on African Violets listed under Garden Reference Books, for \$2.75, or even our brief article in 1949 Price List which now costs 10c.

**African Violets** are foliage plants as well as flowering plants. If you have not yet solved the problem of continuous bloom, you can do it if you have the determination and the skill acquired by experience. In the meantime, appreciate their foliage and groom with loving care. The prettiest foliage of all are the Girl type. Their leaves have crenate, or roundly scalloped margins. The dark green leaves become very light green toward the center, making them two toned.

The most highly developed of this type is our 1951 introduction, **Sherry Girl**, which Mrs. Houdyshel has named in honor of our great-granddaughter, Sherry, the prettiest, littlest baby girl who smiles so easy to show her dimples. **Sherry Girl** violet has rounded, deep crenations. The leaves are a perfect rosette. A profuse bloomer.

In the following list of varieties, descriptions are brief. If the name describes the plant there is no description. This is but a partial list. When you want a variety not in our list inquire for it. We may have it. Southern California customers should visit our greenhouses and select plants. We are 30 miles east of Los Angeles. Very near Fair Grounds.

**Bi-color.** \$1.00.

**Blue Boy Supreme.** Deepest blue violet. \$1.25.

**Blue Girl.** Pat. Dark blue. \$1.25.

**Blue Girl Compacta.** Sm. plants. Leaves very compact, blue flower. \$1.50.

**Bronze Girl.** New. \$2.50. Delivery in late spring or summer.

**Dainty Maid.** Pink. \$1.50.

**Double Blue Boy** (Dbl. Duchess). \$1.00.

**Double Neptune.** New. Lg. Fls. Fully double, and long lasting, perfect form. Blue-white petaloids in the center, reverse is silvery-white, a profuse bloomer. \$2.00.

**Double Orchid.** \$1.25. Sm. plants only.

**Du Pont Blue.** \$1.00.

**Du Pont Series.** No. 1 darkest to No. 5 the lightest blue. \$2.00 ea.

**Du Pont Lavender Pink.** True orchid with deeper lavender around outer edge of petals. \$1.00.

**Fantasy.** Light lavender, rayed, splashed and dotted deep purple. Sm. plants \$1.75.

**Gorgeous Bi-Color.** New. Very large fls., two tone color. Light lavender with distinct, dark orchid purple eye and shading into two upper petals. Free flowering. \$2.00.

**Hendrix' Ethel.** Very large flowers similar to Du Pont Lav. Pink but larger. \$1.50.

**Lady Geneva.** Pat. Blue with white edge. \$1.50.

**La Jolla Plum.** Deep plum. \$1.50. (Pronounce Lah Hoi-ya.)

**Merkel's Giant Blue.** \$1.25.

**Moonbeam.** White. \$1.50.

**Neptune.** Blue violet, rounded petals. Very pretty. \$1.00.

**Norseman.** Medium blue violet. \$1.00.

**Orchid Girl.** \$1.50.

**Periwinkle.** Light grey blue with white eye. \$2.00.

**Pink Amethyst** (West Coast Amethyst). Good bloomer. Lav. pink with bi-color tendency. \$1.25.

**Pink Beauty.** Pat. \$1.00.

**Pink Supreme.** \$1.50.

**Purple Prince.** Very deep purple. \$1.00.

**Red Head.** \$1.00.

**Red Head Supreme.** \$1.50.

**Red King.** New. Claret-red. Free flowering. A striking show plant. Considered the best red by many. \$2.00.

**Red Queen.** Very free bloomer. Beautiful plant. \$1.50.

**Ruffles.** Small plants. Very dark, small pointed leaves. Fls. med. blue. \$1.50.

**Sailor Boy.** Med. blue. \$1.00.

**Sailor Girl.** New. Beautiful shade of bright blue with colorful yellow stamen center. Lg. flowers in profusion. Foliage bright green with white center and veining. Scalloped edges. Easy. \$1.50.

**Sherry Girl.** New. Beautiful dark green girl foliage, blue fls., very ruffled. This is our 1951 introduction. It is the best girl type so far. Sm. plants only. Delivery begins about April. \$2.50.

**Spoongirl** (Hendrix). New. Lovely spoon girl foliage, a must for your collection. \$2.00.

**Sky Blue** (Tinted Lady). White overlaid with a tint of light grey blue. \$1.25.

**Shipping Saintpaulias.** Mrs. Houdyshel has developed methods by which we are able to ship safely to all the states, to Canada, Mexico, South America and even to farther countries. We have shipped to Kodiak and Fairbanks, Alaska, Hawaii and Costa Rica and plants arrived in from excellent to perfect condition. We can't ship by mail to cold states in winter, but we can ship by express in winter to most states, if you so order. Order early and tell us how and when to deliver.

No other growers attempt to ship Saintpaulias in the winter. The method we propose to try is fully explained in our Introductory Letter. Please read it before you decide to try a winter shipment.

**Achimines** are important members of the Gesneriaceae. Once so popular, they declined a little in favor but now they are enjoying a renaissance of their popularity. They closely parallel Gloxinias in color and form of flowers, foliage characters, ecology in nature and culture, but they have smaller flowers and are stemmed plants. The tubercles of Achimines are very small, resemble a tiny pine cone and increase very rapidly.

**Culture.** The soil and temperature favorable for starting Achimines are about the same as for Gloxinias. They must be kept only slightly moist until they are up. While at all times this class of plants should never

become dry, they must all have perfect drainage and not be overwatered. Achimines sometimes start to grow very soon and others may not start for several weeks. Being patient and keeping them slightly moist is all you can do about it.

Three to five may be grown in a 5" pot. So can one, but it isn't enough. A really satisfactory way to grow Achimines is in wire baskets. The basket is well lined with dampened sphagnum. It is then nearly half filled with the compost. On the outer perimeter of this surface and rather close to it lay the tubercles about 2" to 4" apart. Cover by an inch or so of the compost and again circle the outer perimeter with tubercles. Cover as before. Two or three circles can be planted, depending on size and depth of basket. The top may also be planted, tubercles spaced perhaps rather farther apart. Mulch the upper surface with spagnum to prevent erosion when watering. Achimines are shallow rooted and stems are single, non-branching and pendulous except Harry Williams. The result when the plants are growing and flowering is a thing of beauty.

After the plants are growing well they need rather cooler temperatures, and usually a cool place, as it is summer by that time, when in bloom. Overwatering when buds form may cause them to drop off or fail to flower.

If tubercles are broken, every piece grows but small pieces produce small plants.

Achimines may be stored, packed in sand, peat or vermiculite at about 60°. Cigar boxes are good for this.

To save space for a longer list we must also paragraph the list of Achimines. 1. **Adele de la Haute**. Shell pink, 25c, 3/50c. 2. **Andersoni**, 50c, 3/\$1.35. 3. **Atropurpurea**. Purplish red. 25c, 3/60c. 4. **Carmen The Gypsy**. Dark carmine. Dark foliage. 35c, 3/\$1.00. 5. **Dainty Queen**. Large white. Lavender, dot in center. 35c, \$3/\$1.00. 6. **Diadem**. Large fuschia purple. Velvety emerald leaves, 35c, 3/\$1.00. 7. **Edmond Bossier Improved**. Striped purple, yellow center. 30c, 3/75c. 8. **Galatea**, Early medium blue. 35c, 3/\$1.00. 9. **Giant Pansy**. Pansy like, sky blue, yellow and purple spots. 25c, 3/60c. 10. **Harry Williams**. Cerise fls. Upright stems. 40c, 3/\$1.10. 11. **Little Beauty**. Salmon rose. Dark foliage. 25c, 3/60c. 12. **Longiflora Major**. Cobalt blue. Very large fls. 25c, 3/60c. 13. **Longiflora Maduna**. Rose lavender, white throat. Leaves veined red. 35c, 3/\$1.00. 14. **Loveliness**. Violet purple. 35c, 3/\$1.00. 15. **Margaret**. Pure white. 25c, 3/50c. 16. **Mauve Queen**. Violet blue, crimson spotted, yellow eye. 25c, 3/60c. 17. **Maxima**. White, purple eye, feathered red. 25c, 3/50c. 18. **Mexicana**. Dark blue. 25c, 3/60c. 19. **Miniata**. Copper tone. 25c, 3/60c. 20. **Mme. Geheune**. Lg. magenta red. 35c, 3/\$1.00. 21. **Patens**. Rosy wine. Dwarf. 25c, 3/60c. 22. **Pulchella**, Scarlet. 35c, 3/\$1.00. 23. **Pulcherrima**. Rich purple. Bronze lvs. 25c, 3/60c. 24. **Purple King**. Royal purple. 25c, 3/50c. 25. **Scarlet Beauty**. 45c, 3/\$1.25. 26. **Venusta**. 35c, 3/\$1.00. 27. **Vivid**. 35c, 3/\$1.00.

Please order Achimines by number rather than by name. When you receive them they will be labelled by these numbers. You can identify them from the list and pot label by names. Celluloid pot labels, 3c ea.

**Collections.** One each of 27 var. for \$9.00. Three of each (which will look much better in a pot) for \$20.00. These collections will be labelled.

**Assorted varieties.** By an accident a few finest varieties were mixed. This assortment contains Master Ingram, Venusta, Loveliness, Andersoni, Purple King and Longiflora major, all top notch sorts. Price, 10 for \$2.00.

**Achimines tubiflora** has also been called a Gloxinia. Others have identified it as Dolichoderia. Botanists are in doubt. The plant looks like a very fine Achimines and the tuber is like a small potato. The large, pure white flowers are very fragrant. It has been suggested that it could be grown outside like Tub. Begonias but possibly Achimines culture is safer. Price 45c per tuber.

**Smithiantha hybrida**, clone **Golden King**. Yellow tubular flowers. The cordate leaves are more beautiful even than the flowers. The tubers resemble Achimines in form but are much larger. Culture like Gloxinias. One tuber to a 5" pot. Delivery early summer. 50c and 75c ea.

## BEGONIA FAMILY — Begoniaceae

**Tuberous Begonias and How to Grow Them.** Tuberous Begonias are wonderfully attractive plants for pots and baskets or in the garden. Their popularity is modern and results from recent improvements of their flowers in color, size and form and the great increase in the number of types offered. Begonias respond generously to the skill of the hybridizer and take on the forms and closely imitate the flowers of Camellias, Carnations, etc.

The flowers of Begonias are monoecious. This means that the individual flowers are not perfect—containing both male and female parts but that there are male and female flowers, separately produced on the same plant. The large terminal flower is a male with a stamen. On each side is a smaller female flower with pistil and ovary. If one wishes to produce seed, the pollen from the stamen is placed on the terminal stigma. Even an amateur can produce interesting forms by crossing the types. Seedlings may be grown on a thin layer of sifted compost on top of a porous brick and the brick set into a shallow pan of water. Or place seed on the surface of wet peat in a pot and cover with glass. Watering of plants when necessary must be done by setting pot in tepid water. When large enough, seedlings may be picked up by a toothpick and potted into 2" pots of peat. Continue to water by setting pots in a pan of tepid water.

If Tub. Begonias are potted at once when received they must be watered very little until they start to grow. The better practice is to start them by laying the tubers on top of slightly moist sphagnum. They may be covered just slightly, with the concave side containing the "eyes" only partly hidden. Keep them only slightly moist at a temperature of 60° to 65°, shaded.

When the top is an inch or more in height it may be removed with a bit of the compost into its pot or basket. The practice of merely storing the tubers and potting them when they start to grow is good. The heated, dry air of a living room is a poor place to store the tubers, to start them or to grow plants.

The soil for Tub. Begonias may be  $\frac{3}{4}$  humus and  $\frac{1}{4}$  sand or very sandy loam. For the humus use  $\frac{2}{3}$  peat or leaf mould and  $\frac{1}{3}$  well rotted, old dairy manure. All should be well mixed and fine in texture. Soil should be acid, pH 6.5. If not sufficiently acid, add more peat. The addition of small pieces of charcoal or a tablespoonful of soot is useful. The "Houdyshel" method" for potting and growing, as described under Caladiums, is good.

Varied diet for all plants is best. Alternate Spoonit, liquid manure and soot water, handful to  $2\frac{1}{2}$  gal. water, is a good regime. Begonias are good feeders. Feed little and often. Spray plants well, daily. They need only half shade, a cool moist situation. Avoid full sun or full shade. It is best to shift to outdoors when warm. The tubers usually live over winter in So. Calif., but it is better to dig, dry and store here, and necessary in colder climates.

The best Tuberous Begonias are grown by two famous Capitola, Calif., wholesale nurseries. Flowers of their origination were illustrated in color on five full pages of Life Magazine on Sept. 18, 1950. Note the gorgeous illustrations of Red Triumph, Sunset, and Picotee. The tubers we sell are the product of these nurseries. Imported bulbs produce very poor flowers, smaller and only semi double. We sell the best size,  $1\frac{1}{4}$ "- $1\frac{1}{2}$ " diam. for 5" pots. The size of the flowers does not depend on size of tubers but this size makes smaller plants than the 2" tubers. Our named varieties, Red Triumph, etc., are large tubers and if not to be shifted to outdoors will need 7" pots. It is easy to shift to larger pots if they grow too large. The Lloydi type should be planted 3 to an 8" wire basket.

**Giant Double Camellia Flowered.** Offered in 11 colors. White, Pink, Rose, Crimson Rose, American Beauty, Yellow, Apricot, Salmon, Orange, Scarlet, Red. Price 30c ea. \$3.00/doz., one var. or assorted. The 11 var. in one bag for \$3.00.

**Giant Double Carnation Flowered.** This type is similar but has fringed petals. The flowers are like huge carnations. 9 colors, white, pink, rose,

crimson rose, yellow, apricot, salmon, orange, scarlet. 30c ea. One var. or assorted, \$3.00/doz. One each of 9 colors, in one bag, for \$2.50.

**Giant Double Picotee.** Also similar to Camellia Flowered but petals are edged white. 5 colors, pink, rose, salmon, apricot, red. 30c ea., \$3.00/ doz., one kind or assorted. 5 colors, one of ea. in one bag, \$1.40.

**Double Hanging Basket or Lloydi.** Smaller, double fls. on pendulant stems. Nice in pots, hanging baskets or rock gardens. 9 colors, red, white, rose, scarlet, pink, orange, yellow, salmon, apricot. 30c ea. \$3.00/doz. for one var. or assorted. One of each 9 colors in one bag, for \$2.50.

**Giant Single Crispa or Frilled.** Very large, profusely frilled and ruffled, single flowers. 9 colors, red, rose, scarlet, pink, salmon, apricot, yellow, orange, white. 30c ea. \$3.00/doz. one var. or mixed. The 9 colors in one bag for \$2.50.

**Giant Single Marginata.** This is a two toned crispa type in 2 colors, white, edged pink, and salmon, edged scarlet. Either color, 35c ea. \$3.50/doz. You may have 6 of each at doz. rate.

**Giant Single Cristata.** Derived from Crispa but less frilled. Each petal bears a coxcomb-like crest. Very new and novel. Assorted colors, 35c, \$3.50/doz.

**Hollyhock Begonias.** Single, mallow pink flowers along a single stem, as in Hollyhock. They make only small tubers. 45c ea., \$4.25/doz.

**Complete Collection** of above, one of each type and color, 47 varieties for \$12.75.

**Named Varieties.** (Illustrated in Life.) **Red Triumph**, pure deep red, ruffled Camellia type; **Rose Dawn**, large rose pink, ruffled. Like a full blown rose; **Sunset**, profusely frilled Crispa type, light copper with scarlet edge; **Autumn Glow**, extremely large, often 10" wide, Cristata type. The crests are deep copper color contrasting with the apricot flower. Foliage is the most attractive and luxuriant of Tub. Begonias. **Prices.** These are all large tubers. The usual price has been \$2.00 each or more. Our special price this year is \$1.00 ea. All four for \$3.85. If you order all these and the collection above listed, we will include free, one tuber of Begonia evansiana, hardy in Calif. and even colder climates, but not too cold. Total cost \$16.50.

## THE ORCHID FAMILY — *Orchidaceae*

Many of the plants we grow in our flower gardens have been known and perhaps cultivated for 2000 years or more. But the successful cultivation of tropical epiphytic orchids is a comparatively recent achievement. Epidendrum cochleatum was the first to be flowered and exhibited in England in 1791. Marshall P. Wilder grew, flowered and exhibited the first one, Oncidium flexuosum, in America in 1837.

It required many years of experimenting before practical methods of culture under artificial conditions could be developed.

But look at them now. Any gardener may grow a few orchids and very many do. We can tell you only briefly here as to culture. For fuller discussions consult the following, which are listed in Garden Reference books. Our pamphlet, "How To Grow Orchids," 25c. Our 1949 Orchid Price List containing, "How To Grow Cattleyas," 10c. White's "American Orchid Culture," beautifully illustrated in color, \$6.00. Chabot's "Greenhouse Gardening for Everyone," \$4.00, which all who have a small greenhouse should own. Bailey's "Cyclopedia of Horticulture," 3 vols. \$37.50. This work tells you how to grow practically every cultivated plant.

Orchids cannot be shipped by parcel post before April 1, to the colder states. It is a hazard for us to send that way in winter except to So. Calif. and to deep south. Most of them will go safely by express, anywhere, if you can arrange to call at your express office at once when they arrive. Most of them will survive temperatures down to almost 33°, but it is better to order them and tell us to ship when positively safe. This may be as late as April 1 to the north or even later to very cold states.

**Cymbidiums** produce fine cut flowers for corsages and are much used by florists. In nature they grow usually as terrestrial plants but sometimes as epiphytes. They may be grown under trees or half shade of a lath house in a soil that is about  $\frac{2}{3}$  peat and  $\frac{1}{3}$  very sandy loam. They may be grown in a similar soil in pots in a greenhouse. They are even easy to grow as house plants, in a kitchen or living room window. They require only cool conditions in winter and are not injured by 32°. Ours survived even 20° outside but there was some injury and all flowers were frozen. One pseudo bulb, with foliage, should grow into a blooming size clump in about 2 years. I have had a few flower within 6 mo. but this result can be expected from only about one in 100.

They should be kept moist, but not soggy, at all times. Foliage should be sprayed daily in summer. To make large clumps bloom, rest them in Aug. and Sept. by giving less water but avoid dryness sufficient to cause injury to foliage.

**Cymbidiums, Butterfly, Doreen, Giganteum, Moira, Winter Cheer, Zebra.** Price \$2.50 ea. **Insigne** makes small plants but nice flowers. Excellent for a smaller pot to fit small space. \$4.00. **Madeline**, a very profuse bloomer, \$5.00. **Hookerianum**, beautiful green orchid, \$7.50. These prices are for one pseudo bulb with foliage. Clumps of two or four bulbs cost at the same rate, but back bulbs and small growths, if any, will be left on. They are shipped loose roots, not in pots, postpaid when weather permits, or f.o.b. express, if you so advise. Express will be easier on your plants.

**Oncidium varicosum Rogersii.** A beautiful yellow spray, 50 or more fls. In clay pots, in osmundine. Only 4 plants at \$5.00 ea., f.o.b. express.

**Cypripedium callosum.** Easy to grow, tropical Lady Slipper. Fine corsage flower. Culture easy. Not hurt at 32°. Must be kept constantly moist. May be grown in same compost as Cymbidiums. Ours are in Orchid-Grow, a commercial mixture. Per pot, \$3.00, \$5.50 and \$7.50. F.o.b. express.

**Cattleyas.** We have many fine species Cattleyas and many fine hybrids, too many for our greenhouse space. We can give you better plants and at a lower price if you allow us to make the selection of the kind.

**Cattleya species.** Fine blooming sized plants at \$5.00 and \$7.50. Smaller plants for as low as \$2.50 and \$3.50. The latter can be grown in about one year to reach a blooming size. It would help these if they were repotted in fresh osmundine. For 50c we will include enough to do the work. To do this remove the plant from pot and from all old osmundine. Do not injure living roots. Fill pot about  $\frac{1}{3}$  with drainage material. Moisten new osmundine and cut into chunks about 2" square. Place a little osmundine on one side and hold any living roots on the plant against this. Begin filling under the plant and prying against osmundine with a potting stick. This potting stick may be made from end of small broom handle and flattened on one end until about  $\frac{1}{2}$ " thick on lower end and cut square across. Make the osmundine very firm under and all around plant. The surface should be about  $\frac{1}{2}$ " below pot rim. After potting, set plants in full shade until roots start. Enough moisture is in osmundine now, only spray foliage every day for a month. Probably new roots will show by that time. Whether they do or not, the spraying should now begin to fall more freely on the compost but don't pot water freely until roots show or new growth begins. Plants will need almost full shade until that time. Good potting directions are in Chabot's "Greenhouse Gardening for Everyone."

These prices are made so that you can afford to experiment. Some failures can be expected but I believe you can usually succeed.

**Cattleya hybrids** at \$5.00, \$7.50 and \$10.00. The larger ones are flowering sized plants.

Cattleyas are shipped in their clay pots, f.o.b. express.

## THE PINEAPPLE FAMILY — Bromeliaceae

Bromeliads include Billbergia, Cryptanthus, Aregelia, Tillandsia, Neoregelia and many more genera. We list Billbergias and only a few others

that require the same culture. These include some of the most unusual and fascinating plants. Not only are the flowers in intriguing pastel colors but the floral display is made brilliant by the large vividly colored bracts that cover the scape. The leaves form a rosette and are more or less rigid. Some have brightly colored leaves and others are often mottled, striped or barred. All are desirable foliage plants.

**How to Grow Billbergias.** All are tropical or semitropical and thus are hardy in outdoor gardens only in the deep south. But they are all easy to grow in pots and add distinction as well as beauty to the window garden.

In pots they should have a soil of  $\frac{1}{4}$  sand or sandy loam and  $\frac{3}{4}$  peat or leaf mould. There should be plenty of drainage material in the pot as poor drainage may soon destroy them. Do not overwater when first planted or in winter when semi-dormant. Nor should they become dry enough to shrivel the foliage. In hot weather when they are growing well, water liberally. Keep a drink of water in their cups in the center.

In the outdoor garden they should have the same soil as recommended for pots. A few, like "nutans," will grow in nearly any soil but will do much better in the type recommended.

They need about half shade. Too much sun will burn and finally destroy the foliage. Those species and varieties having highly colored foliage do not develop their rich colors when too deeply shaded. Most of our plants are grown in a well shaded Clivia house. When well established and growing, richer colors may be brought out by giving a little more sun than we do.

**Aregelia spectabilis.** The bronze foliage with greyish green transverse bands on the outside make this a spectacular plant. \$3.50.

**Billbergia calophylla.** Large, bronze-green foliage with contrasting bars of grey. Very large, showy inflorescence of blood-red bracts and blue flowers. \$2.00.

**B. corina.** Beautiful foliage, barred grey. \$2.50.

**B. distachia.** Foliage, reddish green with cream spots. Long flower racemes with rose pink bracts and blue flowers with green margin. Blooms early spring and again in late summer. 50c. Three clones, slightly different, one of each for \$1.15.

**B. nutans.** The most popular of all as it blooms in midwinter and is very lovely. Pink bracts, blue and green flowers. 50c. Three for \$1.00.

**B. nutans x cryptanthus acaulis.** A highly colored hybrid with bronze and green leaves. Compact growth. \$2.00.

**B. Pyramidalis Hybrid.** **Pyramidalis x Amoena.** Both parents are outstanding and this hybrid is no less. Beautiful in foliage and inflorescence. \$2.25.

**B. rubro-cyanea.** The most colorful in foliage, showing green, white and red combinations. Inflorescence, crimson bracts, flowers green, edged dark blue. To bring out colors in foliage give more sun exposure, being careful that foliage does not burn. Two seedlings of this sanderiana-nutans hybrid at \$1.25 ea. or both for \$2.00.

**B. speciosa.** Foliage green above. Under side greyish green. Bracts rose, flowers pale green tipped with blue. \$2.00.

**B. Theodore L. Meade (Meade's Hybrid).** Nutans x Nobile. Handsome green foliage with vivid large inflorescence. It is called an everbloomer. But this does not mean that one plant blooms continuously or even almost. However, a large group of plants will show flowers for nearly the entire year. It has no definite season but flowers from new leads as they reach the proper maturity. \$2.00.

**B. thrysiflora.** Mature foliage faintly barred. Summer blooming. Vivid inflorescence, scarlet bracts, blue and purple flowers. \$1.50.

**B. Zebrina.** Leaves with contrasting white bands and spots. Salmon bracts and green flowers. \$2.50.

Collection of all 12 varieties, \$20.00.

**The Big Four Collection** includes Nutans, Distachia and two slightly different clones of Rubro-cyanea. Here you have the most colorful in foliage and a mid-winter bloomer that would cost you singly \$3.50. The 4 for \$2.75.